

**Pioneer**

# Service Manual



ORDER NO.  
RRV2132

MD/CD RECEIVER SYSTEM

# X-HMD01 X-HMD03

CD RECEIVER SYSTEM

# X-HX99 X-HX05

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model				Power Requirement	Remarks
	X-HMD01	X-HMD03	X-HX99	X-HX05		
KBWXCN	○	○	○	○	AC120V	

## System Component Table

Component	Model				Remarks
	X-HMD01	X-HMD03	X-HX99	X-HX05	
CD Receiver	XC-HMD01	XC-HMD03	XC-HX99	XC-HX05	
MD Recorder	MJ-HMD01	MJ-HMD03	•••••	•••••	
Speaker System (L ch)	S-HMD01LR	S-HMD03L	S-HX99LR	S-HX05LR	
Speaker System (R ch)	S-HMD01LR	S-HMD03R	S-HX99LR	S-HX05LR	

## CONTENTS

1. SAFETY INFORMATION .....	2	7. GENERAL INFORMATION .....	58
2. EXPLODED VIEWS AND PARTS LIST .....	4	7.1 DISASSEMBLY .....	58
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM ..	14	7.2 PARTS .....	61
4. PCB CONNECTION DIAGRAM .....	37	7.2.1 IC .....	61
5. PCB PARTS LIST .....	52	7.2.2 DISPLAY .....	73
6. ADJUSTMENT .....	56	8. PANEL FACILITIES AND SPECIFICATIONS ....	75

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## 1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.


### WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65



### NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

### REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

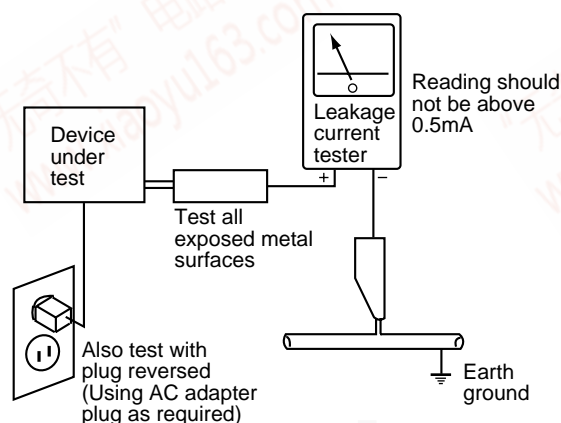
### (FOR USA MODEL ONLY)

## 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

### LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

## 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a  $\Delta$  on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

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VARO!  
AVATTAESSA JA SUOJALUKITUS  
OHITETTAESSA OLET ALTTIINA  
NÄKYMÄTTÖMÄLLE LASERSÄTEIYLLE.  
ÄLÄ KATSO SÄTEESEEN.



LASER  
kuva 1  
Lasersäteilyn  
varoituserkki

WARNING!  
DEVICE INCLUDES LASER DIODE WHICH  
EMITS INVISIBLE INFRARED RADIATION  
WHICH IS DANGEROUS TO EYES. THERE IS  
A WARNING SIGN ACCORDING TO PICTURE  
1 INSIDE THE DEVICE CLOSE TO THE LASER  
DIODE.



LASER  
Picture 1  
Warning sign for  
laser radiation

ADVARSEL :  
USYNLIG LASERSTRÅLING VED ÅBNING  
NÅR SIKKERHED SAFBRYDERE ER UDE AF  
FUNKTION. UNDGÅ UDSÆTTELSE FOR  
STRÅLING.

VARNING!  
OSYNLIG LASERSTRÅLNING NÅR DENNA  
DEL ÄR ÖPPNAD OCH SPÄRREN  
ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

IMPORTANT  
THIS PIONEER APPARATUS CONTAINS  
LASER OF CLASS 1.  
SERVICING OPERATION OF THE APPARATUS  
SHOULD BE DONE BY A SPECIALLY  
INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS  
MAXIMUM OUTPUT POWER : 5 mw  
WAVELENGTH : 780-785 nm

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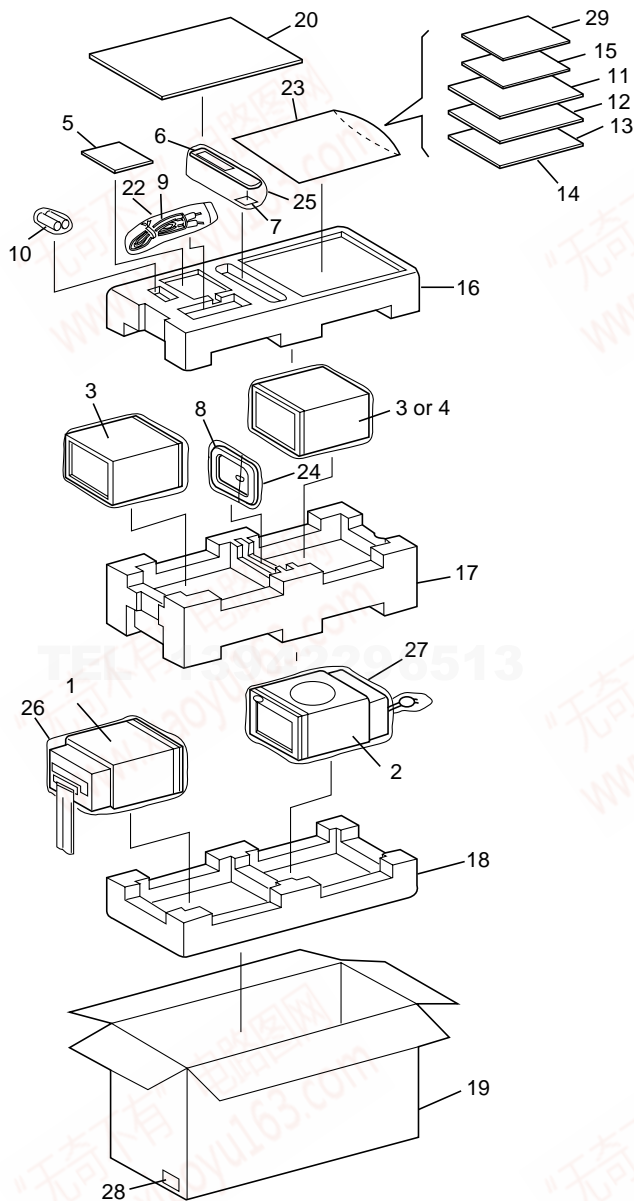
# X-HMD01, X-HMD03, X-HX99, X-HX05

## 2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.  
 ● The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part.  
 Therefore, when replacing, be sure to use parts of identical designation.  
 ● Screws adjacent to  $\nabla$  mark on the product are used for disassembly.

### 2.1 PACKING

#### 2.1.1 X-HMD01 and X-HMD03



#### (1) PACKING PARTS LIST

Mark	No.	Description	Part No.
NSP	1	MD Recorder	See Contrast table (2)
NSP	2	CD Receiver	See Contrast table (2)
NSP	3	Speaker System (L ch)	See Contrast table (2)
NSP	4	Speaker System (R ch)	See Contrast table (2)
NSP	5	Sound Scape Disc	See Contrast table (2)
	6	Remote Control Unit (REA-22C)	60231A
	7	Remote Control Battery Cover	60231-1
	8	AM Loop Antenna	60232
	9	CD/MD Cable	60233
	10	Dry Cell Battery (AA, R6P)	60235
	11	Operating Instructions (CD) (English)	66780-CDU
	12	Operating Instructions (CD) (Chinese)	66780-CDC
	13	Operating Instructions (MD) (English)	66780-MDU
	14	Operating Instructions (MD) (Chinese)	66780-MDC
	15	Initial Instruction Manual	66783
	16	Polyform (TOP)	66753
	17	Polyform (MIDD)	66754
	18	Polyform (BOTTOM)	66755
	19	Display Carton	See Contrast table (2)
	20	Carton Paper	66782
	21	•••••	
	22	Polybag	53110
	23	Polybag	53117
	24	Polybag	53101
	25	Polybag	53110
	26	Mirror Mat (MD)	66694
	27	Mirror Mat (CD)	66794
	28	JAN Cord Label	See Contrast table (2)
	29	Safety Directions	See Contrast table (2)

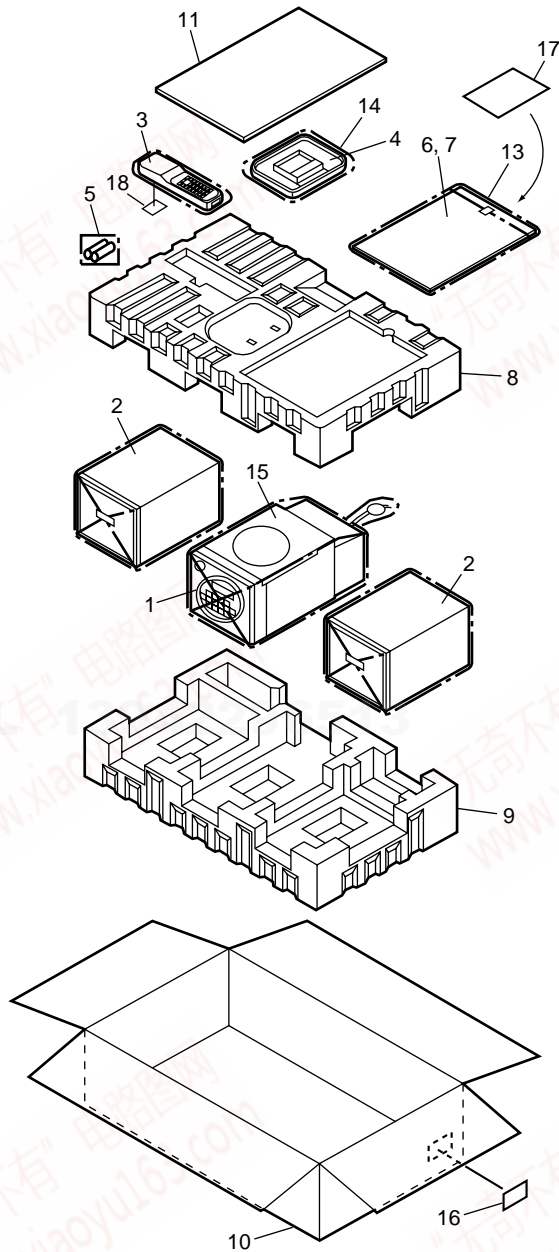
### (2) CONTRAST TABLE

X-HMD01 and X-HMD03 are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			X-HMD01	X-HMD03	
NSP	1	MD Recorder	MJ-HMD01	MJ-HMD03	
NSP	2	CD Receiver	XC-HMD01	XC-HMD03	
NSP	3	Speaker System (L ch)	S-HMD01LR	S-HMD03L	
NSP	4	Speaker System (R ch)	S-HMD01LR	S-HMD03R	
	5	Sound Scape Disc	60234-01	60234-03	
	19	Display Carton	66781-01B	66781-03B	
	28	JAN Cord Seal	66790-01B	66790-03B	
	29	Safety Directions	66784-01B	66784-03B	



## 2.1.2 X-HX99 and X-HX05



### (1) PACKING PARTS LIST

Mark	No.	Description	Part No.
NSP	1	CD Receiver	See Contrast table (2)
NSP	2	Speaker System	See Contrast table (2)
	3	Remote Control Unit (REA-22C)	60231A
	4	AM Loop Antenna	60232
	5	Dry Cell Battery (AA, R6P)	60235
	6	Operating Instructions (CD) (English)	66780-CDU
	7	Operating Instructions (CD) (Chinese)	66780-CDC
	8	Polyform B (TOP)	66682
	9	Polyform B (BOTTOM)	66683
	10	Display Carton	See Contrast table (2)
	11	Carton Sheet B	66678
	12	•••••	
	13	Polybag	53117
	14	Polybag	53101
	15	Mirror Mat (CD)	66794
	16	POS Code Seal	See Contrast table (2)
	17	Safety Directions	See Contrast table (2)
	18	Remote Control Battery Cover	60231-1

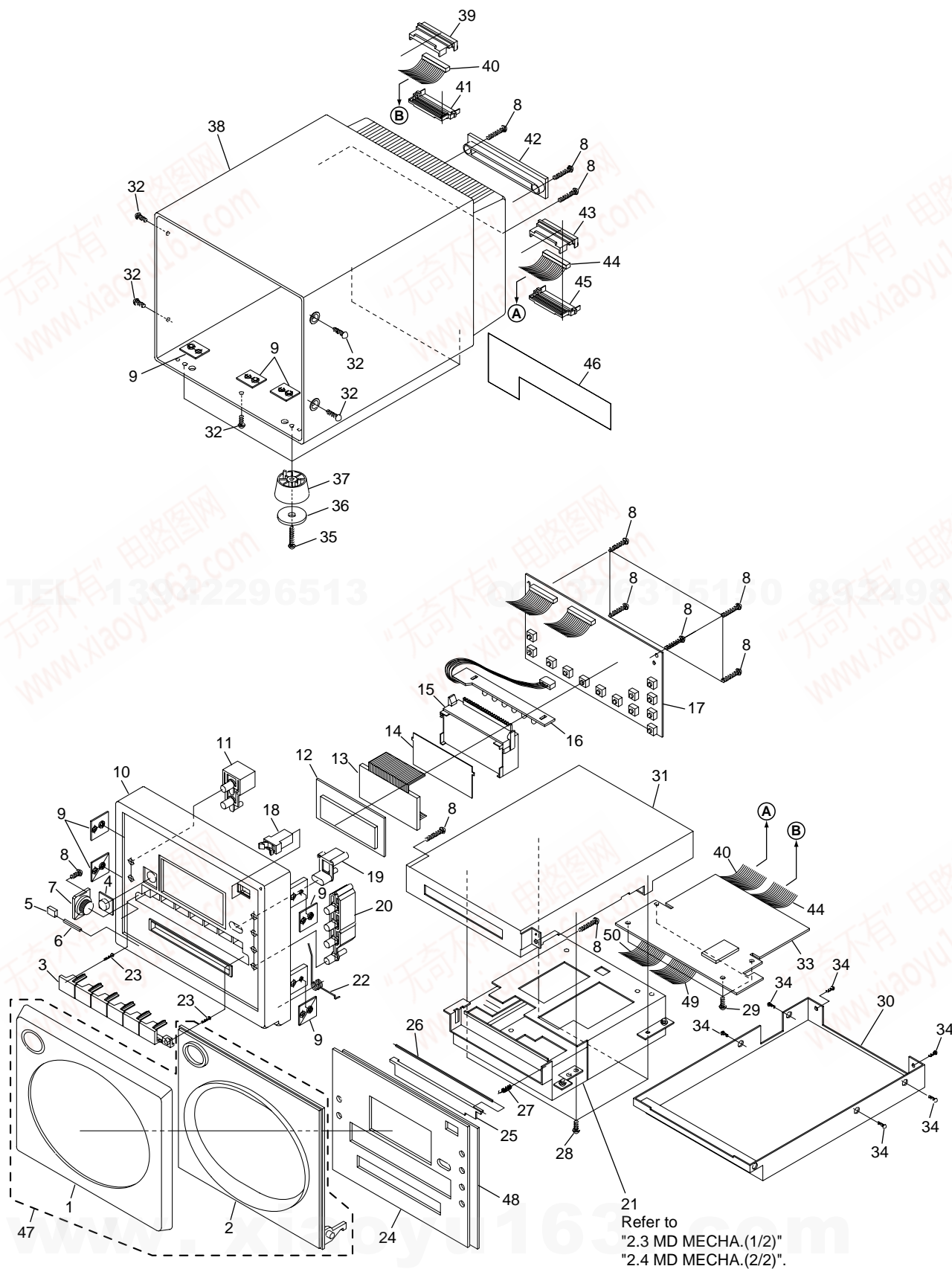
### (2) CONTRAST TABLE

X-HX99 and X-HX05 are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			X-HX99	X-HX05	
NSP	1	CD Receiver	XC-HX99	XC-HX05	
NSP	2	Speaker System	S-HX99-LR	S-HX05-LR	
	10	Display Carton	66677-99B	66677-05B	
	16	POS Code Seal	66668-99B	66668-05B	
	17	Safety Directions	66784-99B	66784-05B	

# X-HMD01, X-HMD03, X-HX99, X-HX05

## 2.2 MD RECORDER SECTION



**(1) MD RECORDER SECTION PARTS LIST**

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
NSP	1	Front Cover (MD)	See Contrast table (2)		29	Screw BIND TAPP. M3×6	BMZ30P060FZK
NSP	2	Front Door (MD)	See Contrast table (2)		30	Shield Case (Bottom)	66739
	3	Button B (MD)	See Contrast table (2)		31	Shield Case (Up)	66738
	4	Lens	66734-MD		32	Screw PLAT M3×6	CMZ30P060FNI
	5	Cushion A	66795		33	MD COMBI PCB Assy (AD/DA PCB)	66785B
	6	Door Shaft A	66746		34	Screw PAN M2×4	PMZ20P040FZK
	7	Dumper Gear	60227		35	Screw PAN M3×10	PBZ30P100FMC
	8	Screw PAN TAPP. T3×10	PMZ30P100FNI		36	Leg Rubber (A, B)	See Contrast table (2)
	9	Plate Nut	66741		37	Foot (A, B)	See Contrast table (2)
	10	MD Front Case	See Contrast table (2)		38	MD Rear Case	See Contrast table (2)
	11	Button D (REC)	See Contrast table (2)		39	12P Connector Holder A	66728
	12	LCD Window	66735	NSP	40	12P Connector Assy	66763
	13	LCD Assy	52715		41	12P Connector Holder B	66729
	14	LCD Sheet	66756		42	Wire Clamper	66726
	15	LCD Holder	66727		43	10P Connector Holder A	66730
	16	MD COMBI PCB Assy (LED PCB)	66785C	NSP	44	10P Connector Assy	66778
	17	MD COMBI PCB Assy (FRONT PCB)	66785A		45	10P Connector Holder B	66731
	18	Push Door Lock	60226		46	Back Plate (MD)	See Contrast table (2)
	19	Eject Button	See Contrast table (2)		47	Front Door Assy (MD)	See Contrast table (2)
	20	Button C (MD EDIT)	See Contrast table (2)		48	Panel Tape B	66761
	21	MD Mecha. (KMK-260)	61416		49	16P FFC (SUMI Card)	66775
	22	Front Door Spring	66748		50	19P FFC (SUMI Card)	66776
	23	Screw PAN TAPP. T2×8	PBZ20P080FMC				
	24	Inner Panel (MD)	See Contrast table (2)				
	25	MD Door	66732				
	26	MD Door Shaft	66750				
	27	MD Door Spring	66751				
	28	Screw PAN M3×6	PMZ30P060FZK				

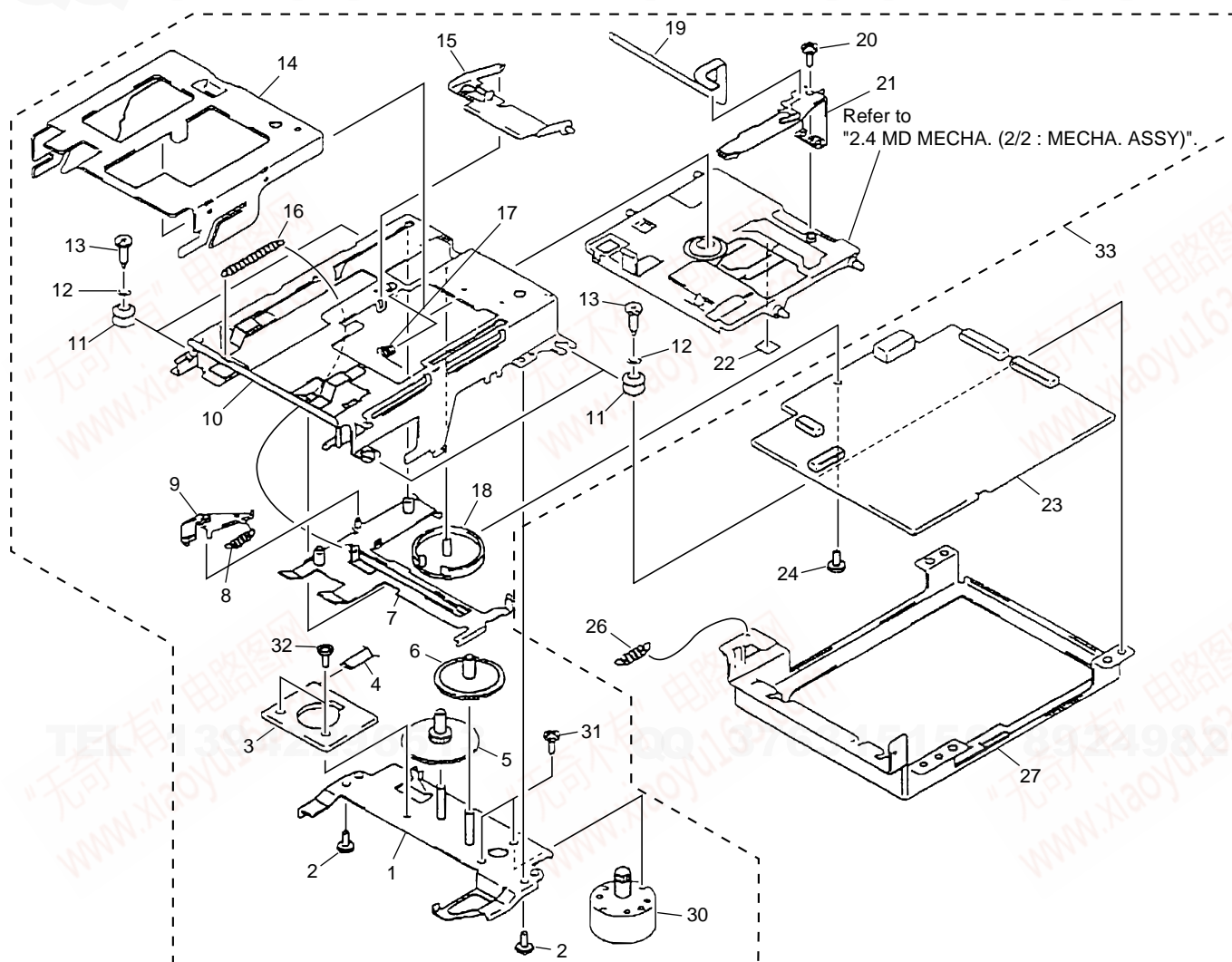
**(2) CONTRAST TABLE**

X-HMD01 and X-HMD03 are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			X-HMD01	X-HMD03	
NSP	1	Front Cover A	66714-01M	Not used	
NSP	1	Front Cover B	Not used	66715-03M	
	2	Front Door A	66708-01M	Not used	
	2	Front Door B	Not used	66709-03M	
	3	Button B (MD)	66717-01M	66717-03M	
	10	MD Front Case	66702-01	66702-03	
	11	Button D (REC)	66791-01R	66719-03R	
	19	Eject Button	66721-01	66721-03	
	20	Button C (MD EDIT)	66718-01ME	66718-03ME	
	24	Inner Panel (MD)	66711-01M	66711-03M	
	36	Leg Rubber A	66758-01	Not used	
	36	Leg Rubber B	Not used	66759-02	
	37	Foot A	66722-01	Not used	
	37	Foot B	Not used	66723-03	
	38	MD Rear Case	66704-01	66704-03	
	46	Back Plate (MD)	66762-01B	66762-03B	
	47	Front Door A Assy (MD)	10000-01M	Not used	
	47	Front Door B Assy (MD)	Not used	10100-03M	

# X-HMD01, X-HMD03, X-HX99, X-HX05

## 2.3 MD MECHA. (1/2 : LOADING ASSY) SECTION

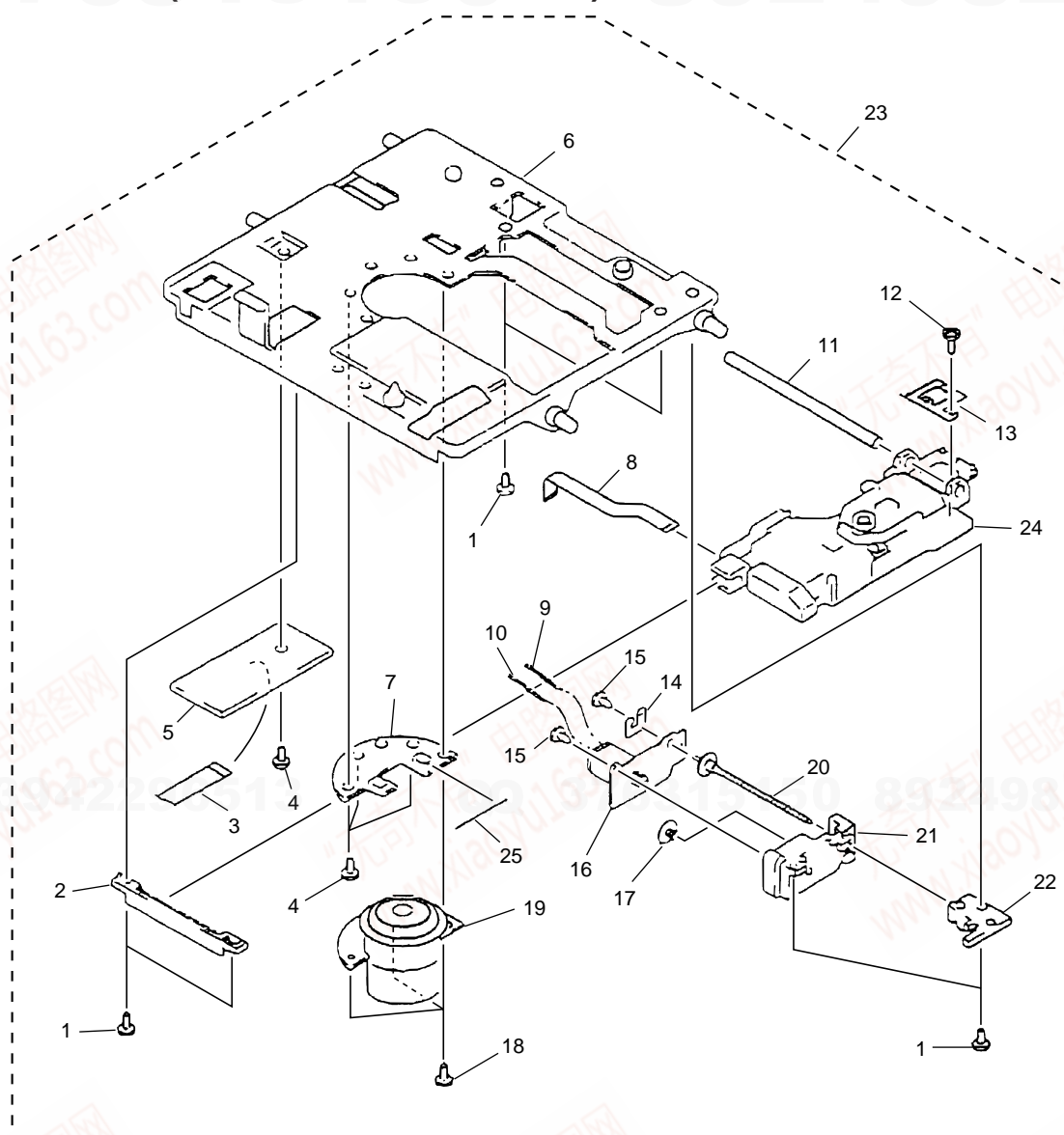


### ● MD MECHA. (1/2 : LOADING ASSY) SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Motor Plate Assy	X-2646-247-1		18	Mode Cam	2-646-560-01
	2	Screw +P2.6×4.5 Type3	7-627-854-28		19	Head Flexible Cable	1-669-181-11
	3	L-SW PCB	1-668-261-11		20	Screw +P1.7×2.5Type2	2-627-529-01
	4	Flexible Cable (6P)	1-783-386-11		21	Overwrite Head for MD	1-500-518-12
	5	Gear (Joint B)	2-646-555-02		22	Double Sided Paper	2-646-549-02
	6	Gear (Joint A)	2-646-554-01		23	MD Mount	A-4917-020-A
	7	Slot Frame Assy	X-2646-249-2		24	Small Screw	2-643-228-01
	8	Coil Spring (Slot Arm)	2-646-563-01		25	•••••	
	9	Slot Arm	2-646-556-01		26	Coil Spring (Door Arm)	2-646-545-01
	10	Load Frame Assy	X-2646-248-2		27	Main Frame	2-646-547-02
	11	Insulator	2-646-548-01		28	•••••	
	12	Screw W2.6,Middle	7-688-002-11		29	•••••	
	13	Screw	4-628-167-01		30	Loading Motor Assy	X-2626-328-1
	14	Slide Frame	2-646-557-01		31	Screw +P1.7×1.8TYP.3	7-627-852-38
	15	Head Arm	2-646-559-01		32	Screw +P2×3 TYP.3	7-627-853-37
	16	Coil Spring (Slot Frame)	2-646-562-01		33	Loading Assy	A-4912-117-A
	17	Coil Spring (Head Arm)	2-646-561-01				



## 2.4 MD MECHA. (2/2 : MECHANISM ASSY) SECTION



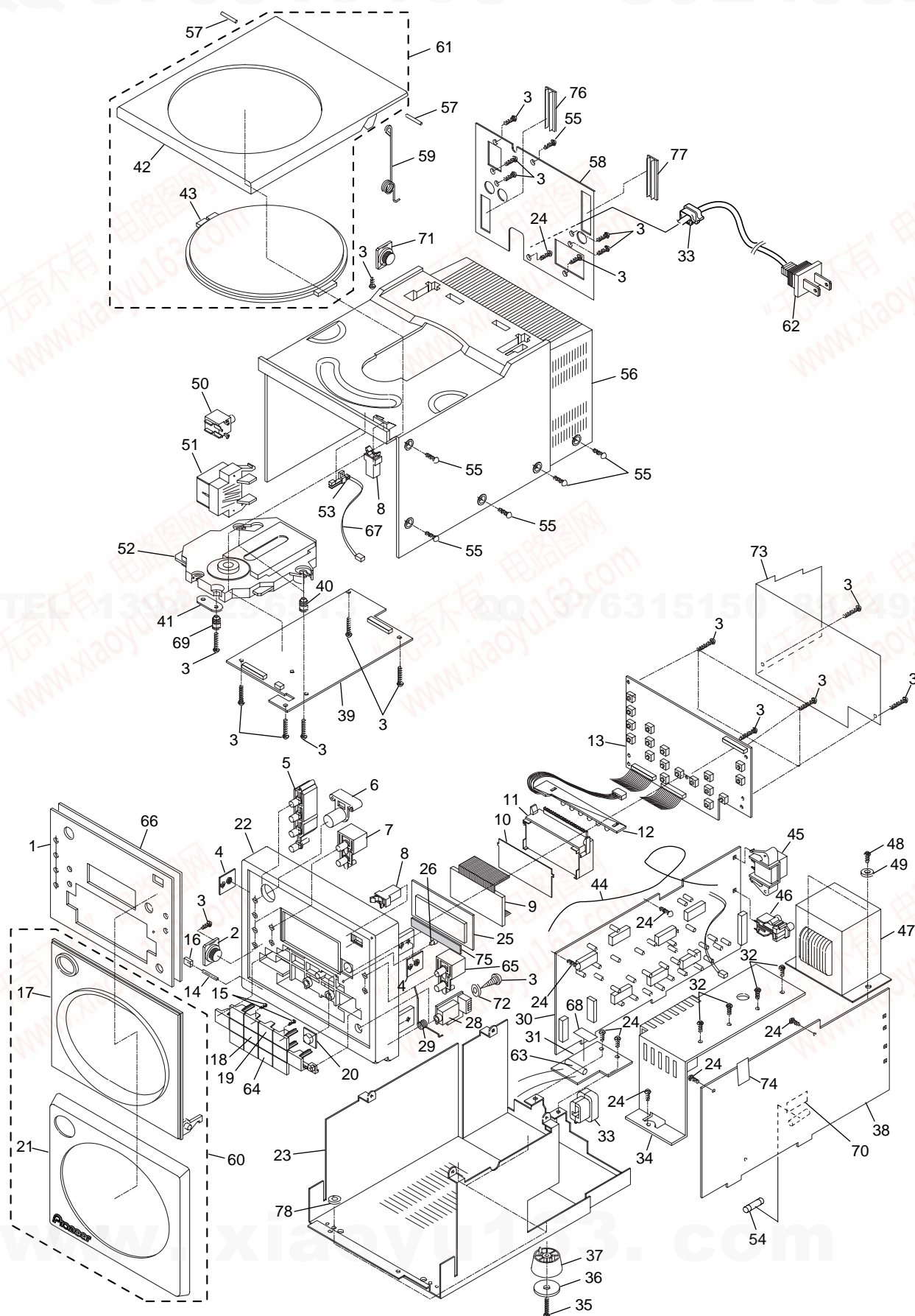
### ● MD MECHA. (2/2 : MECHANISM ASSY) SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Screw Grip +P1.4×3.5 Type3	2-627-404-01	16	SL Motor Assy	X-2626-329-1	
	2	Sub Guide	2-646-453-01	17	Gear (MD)	2-646-571-01	
	3	Flexible Cable (7P)	1-783-387-11	18	Screw +P1.7×4 Type3	7-627-852-18	
	4	Screw +P1.4×1.8 Type3	7-627-850-79	19	SP Motor Assy	X-2626-327-1	
	5	D-SW PCB	1-668-262-11	20	Lead Screw Assy	X-2626-330-1	
	6	Mechanism Chassis	2-646-575-01	21	Lead Holder Assy	X-2626-331-1	
	7	SP Motor Fixing Plate	2-646-566-01	22	Lead Holder (B)	2-646-573-01	
	8	OP Flexible Cable	1-669-180-11	23	Deck Mechanism Assy	A-4912-118-A	
	9	SL Motor Lead Wire	1-783-318-11	24	Mini Disc Device	KMS-260A	
	10	SL Motor Lead Wire	1-783-318-21		KMS-260A		
	11	Guide Shaft	2-646-452-01	25	SP Tension Spring	2-646-564-01	
	12	Screw Grip +P1.4×1.4 Type2	2-627-530-D1				
	13	Rack (Insert)	4-963-914-02				
	14	Pri-Load Plate	2-646-567-01				
	15	Screw	2-627-431-01				



# X-HMD01, X-HMD03, X-HX99, X-HX05

## 2.5 CD RECEIVER SECTION



**(1) CD RECEIVER SECTION PARTS LIST**

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Inner Panel (CD)	See Contrast table (2)		39	CD PCB Assy	66786
	2	Dumper Gear	60108		40	Cushion Rubber	60230
	3	Screw PAN TAPP. T3×10	PBZ30P100FZK		41	Holder Plate	66742
	4	Plate Nut	66741	NSP	42	CD Door	See Contrast table (2)
	5	Button C (SET)	See Contrast table (2)	NSP	43	CD Door Window	See Contrast table (2)
	6	Power Button	See Contrast table (2)	NSP	44	Antenna Cord Assy	66779
	7	Button D (TIMER)	66719		45	AM Antenna Jack	60243
	8	Push Door Lock	60226		46	Pin Jack	52526
	9	LCD Assy (KSG4149)	52716	△	47	Power Transformer	54515
	10	LCD Sheet	66756		48	Screw BIND M4×6	BMZ40P060FMC
NSP	11	LCD Holder	66727		49	Washer	WS40FMC
	12	LED PCB Assy	66788B		50	1P Jack	52525
	13	FRONT CD PCB Assy	66788A		51	Speaker Terminal (4P)	60246
	14	Door Shaft A	66746		52	CD Mechanism Assy	61417
	15	Screw PAN TAPP. T2×8	PBZ20P080FMC		53	Leaf Switch	52802
NSP	16	Cushion A	66795	△	54	Fuse (F302 : 750mA/250V)	51607
	17	Front Door (CD)	See Contrast table (2)		55	Screw FLAT M3×6	CMZ30P060FNI
	18	Button B (CD-2)	See Contrast table (2)		56	CD Rear Case	See Contrast table (2)
	19	Button A (CD-1)	See Contrast table (2)		57	Door Shaft B	66747
	20	Lens	66734-CD		58	Rear Panel	See Contrast table (2)
NSP	21	Front Cover (CD)	See Contrast table (2)		59	CD Door Spring	66749
	22	CD Front Case	See Contrast table (2)		60	Front Door A Assy (CD)	See Contrast table (2)
NSP	23	CD Rear Chassis	66737		60	Front Door B Assy (CD)	See Contrast table (2)
	24	Screw BIND M3×6	BMZ30P060FZK		61	CD Door Assy	See Contrast table (2)
	25	LCD Window	66735	△	62	AC Power Cord	50319
	26	Lens (STANDBY)	66736	△	63	Fuse (F301 : 5A/125V)	51604
	27	Screw BIND TAPP. T3×8	BBZ30P080FZK		64	Button A (CD-3)	See Contrast table (2)
	28	AMP COMBI PCB Assy (HEADPHONE PCB)	66789C		65	Button D (DISPLAY)	See Contrast table (2)
	29	Front Door Spring	66748		66	Panel Tape A	66760
	30	TUNER PCB Assy	66675		67	Connector Assy (2P)	66772
	31	AMP COMBI PCB Assy (FUSE PCB)	66789B		68	Fuse Label	60224
	32	Screw BTT-S T3×8	BSZ30P080FMC		69	Cushion Rubber	60229
	33	AC Cord Bushing	60228		70	Fuse Label	60268
	34	Heat Sink	66743		71	Dumper Gear	60227
	35	Screw PAN M3×8	PMZ30P080FZK		72	Washer	55003
	36	Leg Rubber (A, B)	See Contrast table (2)		73	Shield Plate	66797
	37	Foot (A, B)	See Contrast table (2)		74	Hymeron	51907
	38	AMP COMBI PCB Assy (POWER PCB)	66789A		75	Barrier Plate	66693
					76	10P Connector Cover	See Contrast table (2)
					77	12P Connector Cover	See Contrast table (2)
					78	Cushion Washer	66699

# X-HMD01, X-HMD03, X-HX99, X-HX05

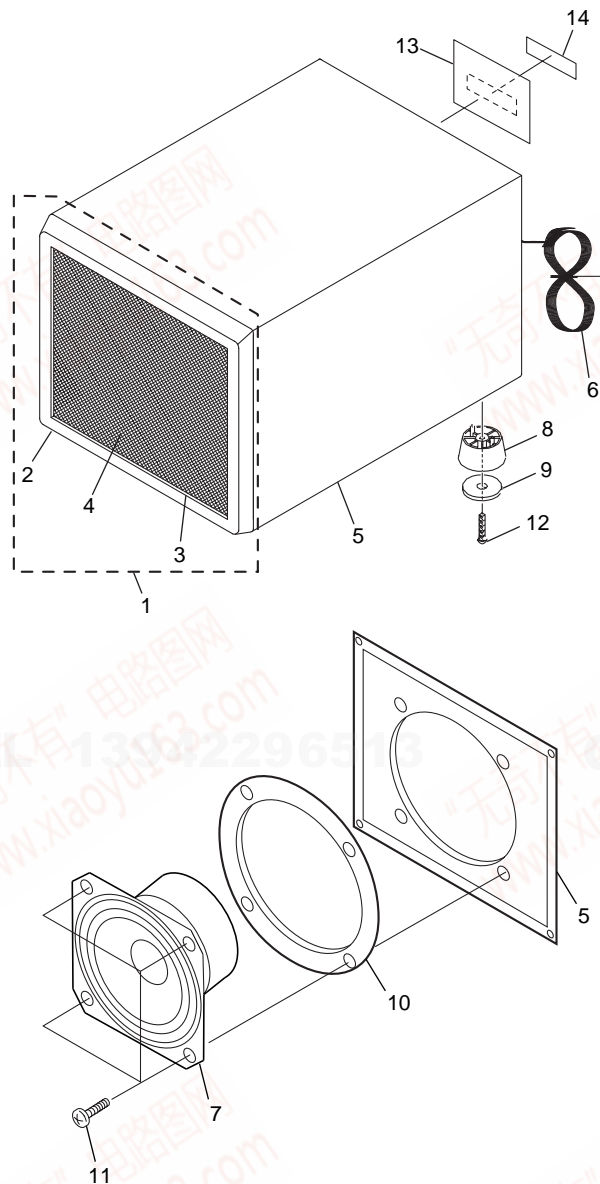
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## (2) CONTRAST TABLE

X-HMD01, X-HMD03, X-HX99 and X-HX05 are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.				Remarks
			X-HMD01	X-HMD03	X-HX99	X-HX05	
NSP	1	Inner Panel (CD)	66710-01C	66710-03C	66710-99B	66710-05C	
	5	Button C (SET)	66718-01S	66718-03S	66718-05S	66718-05S	
	6	Power Button	66720-01	66720-03	66720-05	66720-05	
	17	Front Door A (CD)	66706-01C	Not used	66706-05C	66706-05C	
NSP	17	Front Door B (CD)	Not used	66707-03C	Not used	Not used	
NSP	18	Button B (CD-2)	66717-01C2	66717-03C2	66717-05C2	66717-05C2	
	19	Button A (CD-1)	66716-01C1	66716-03C1	66716-05C1	66716-05C1	
	21	Front Cover A (CD)	66712-01C	Not used	Not used	Not used	
	21	Front Cover B (CD)	Not used	66713-03C	66712-05C	66712-05C	
NSP	22	CD Front Case	66701-01	66701-03	66701-05	66701-05	
	36	Leg Rubber A	66758-01	Not used	66758-01	66758-01	
	36	Leg Rubber B	Not used	66759-02	Not used	Not used	
	37	Foot A	66722-01	Not used	66722-05	66722-05	
NSP	37	Foot B	Not used	66723-03	Not used	Not used	
	42	CD Door	67705-01	67705-03	67705-05	67705-05	
	43	CD Door Window	66733-01	66733-03	66733-99B	66733-0V	
	56	CD Rear Case	66703-01	66703-03	66703-05	66703-05	
NSP	58	Rear Panel	66740-01B	66740-03B	66740-99B	66740-05B	
	60	Front Door A Assy (CD)	10200-01C	Not used	10200-05C	10200-05C	
	60	Front Door B Assy (CD)	Not used	10300-03C	Not used	Not used	
	61	CD Door Assy	10400-01	10400-03	10400-05	10400-05	
NSP	64	Button A (CD-3)	66716-01C3	66716-03C3	66716-05C3	66716-05C3	
	65	Button D (DISPLAY)	66719-01D	66719-03D	66719-05D	66719-05D	
	76	10P Connector Cover	Not used	Not used	66685	66685	
	77	12P Connector Cover	Not used	Not used	66684	66684	

## 2.6 SPEAKER SYSTEM



### ● SPEAKER SYSTEM PARTS LIST (S-HMD01LR)

Mark	No.	Description	Part No.
NSP	1	Speaker Frame Assy	10500-01
	2	Speaker Frame	66724-01
	3	Grille Frame	66725-01
	4	Speaker Net	66744-01
	5	Speaker Box Assy	10600-01
	6	Speaker Cord	50318
	7	Speaker Unit	54407
	8	Foot A	66722-01
	9	Leg Rubber A	66758-01
	10	Packing	66697
	11	Screw	BBZ30P120FZK
	12	Screw	PBZ30P120FZK
	13	Back Plate A Label	66673-01B
	14	Label Plate B	6672

### ● SPEAKER SYSTEM PARTS LIST (S-HMD03L and S-HMD03R)

Mark	No.	Description	Part No.
NSP	1	Speaker Frame Assy L (S-HMD03L)	10500-03L
	1	Speaker Frame Assy R (S-HMD03R)	10500-03R
	2	Speaker Frame	66724-03
	3	Grille Frame	66725-03
	4	Speaker Net L (S-HMD03L)	66744-03L
	4	Speaker Net R (S-HMD03R)	66744-03R
	5	Speaker Box Assy	10600-03
	6	Speaker Cord	50318
	7	Speaker Unit	54407
	8	Foot B	66723-03
	9	Leg Rubber B	66759-02
	10	Packing	66697
	11	Screw	BBZ30P120FZK
	12	Screw	PBZ30P120FZK
	13	Back Plate A Label	66673-03B
	14	Label Plate B	6672

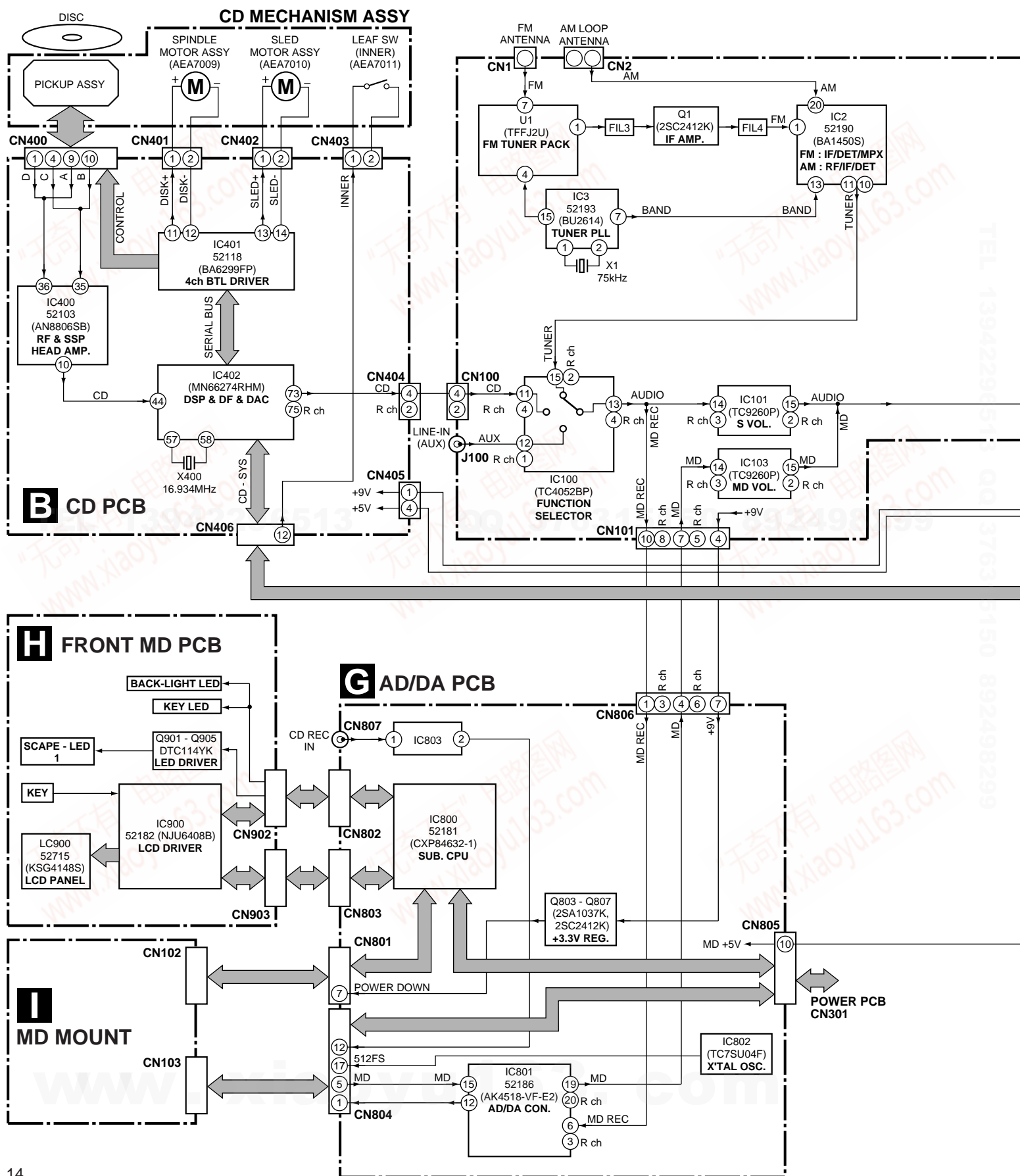
### ● SPEAKER SYSTEM PARTS LIST (S-HX99LR and S-HX05LR)

Mark	No.	Description	Part No.
NSP	1	Speaker Frame Assy	10500-05
	2	Speaker Frame	66724-05
	3	Grille Frame	66725-05
	4	Speaker Net (S-HX99LR)	66744-99B
	4	Speaker Net (S-HX05LR)	66744-05
	5	Speaker Box Assy	10600-05
	6	Speaker Cord	50318
	7	Speaker Unit	54407
	8	Foot A	66722-05
	9	Leg Rubber A	66758-01
	10	Packing	66697
	11	Screw	BBZ30P120FZK
	12	Screw	PBZ30P120FZK
	13	Back Plate A Label (S-HX99LR)	66673-99B
	13	Back Plate A Label (S-HX05LR)	66673-05B
	14	Label Plate B	6672



# 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

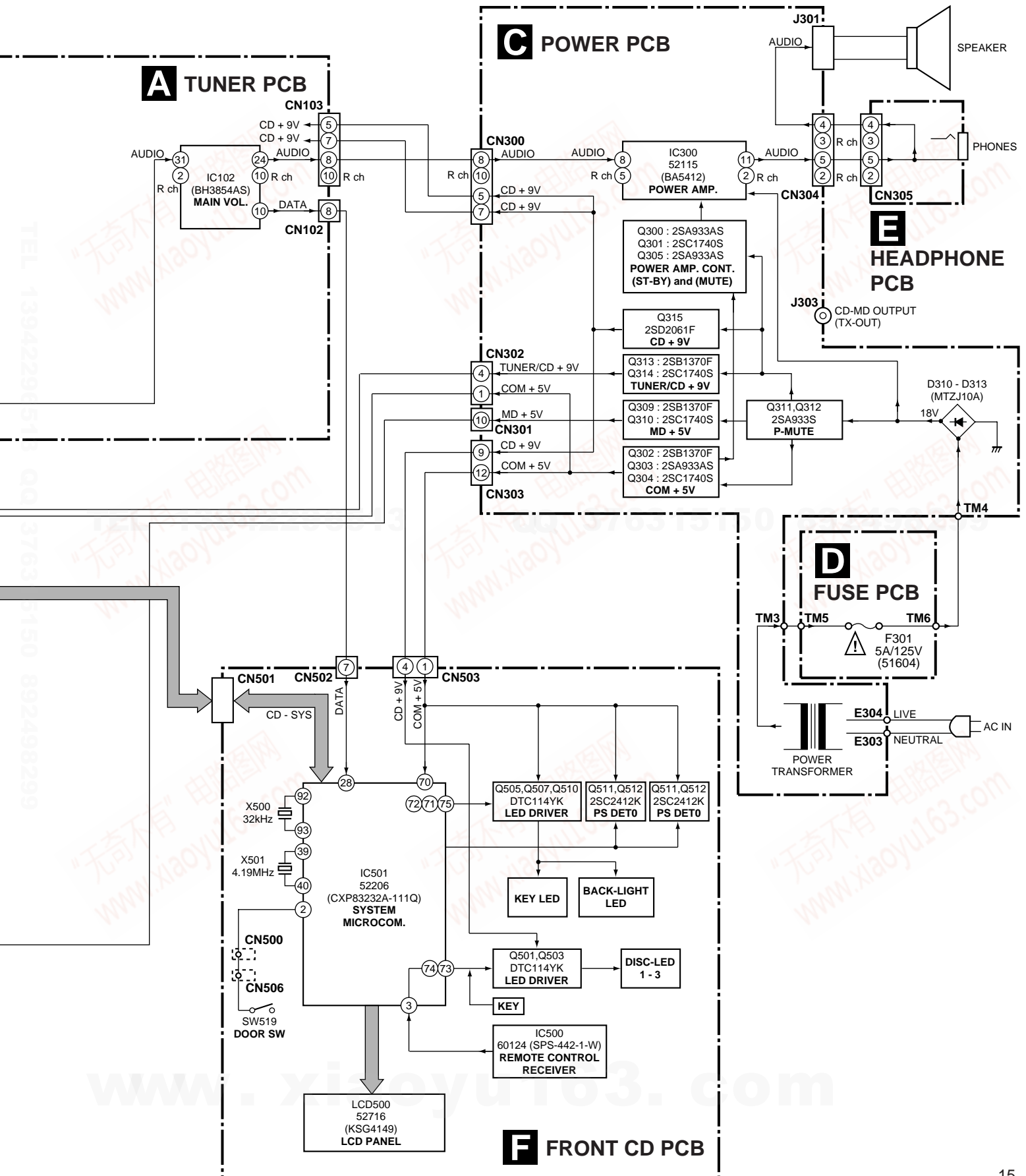
## 3.1 BLOCK DIAGRAM





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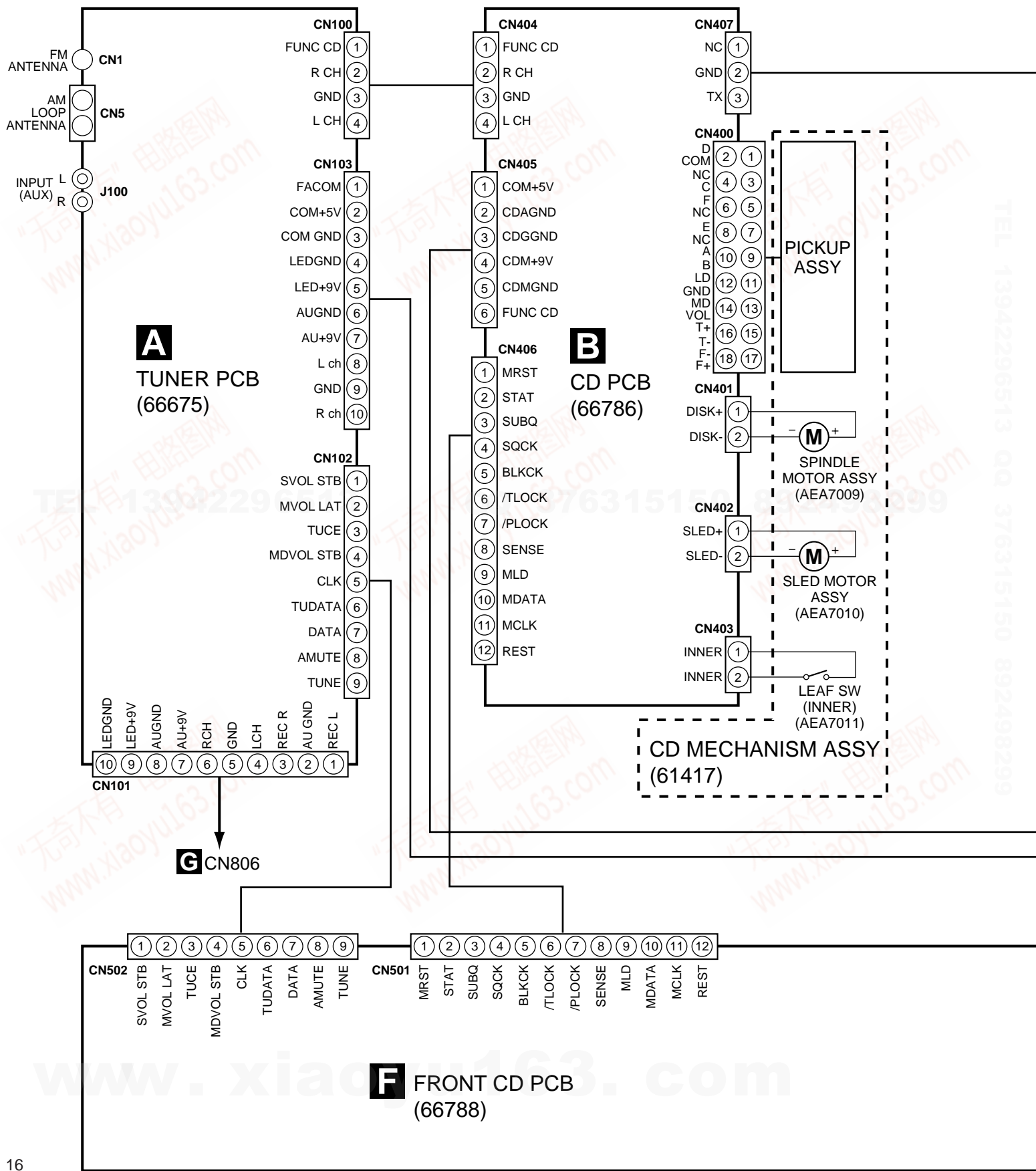


### 3.2 SCHEMATIC DIAGRAM

### 3.2.1 CD RECEIVER SECTION

### 3.2.1.1 OVERALL WIRING DIAGRAM

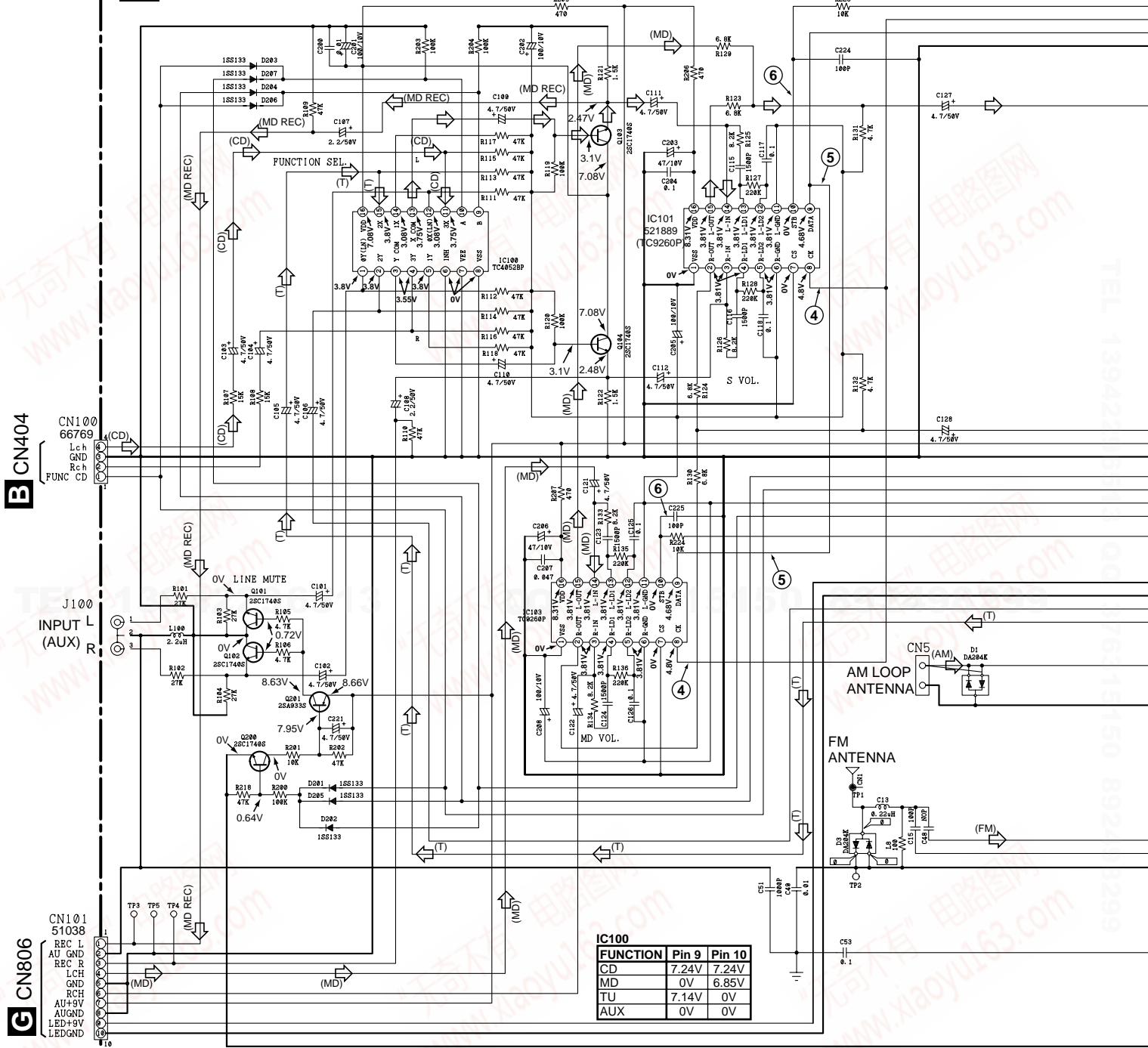
D



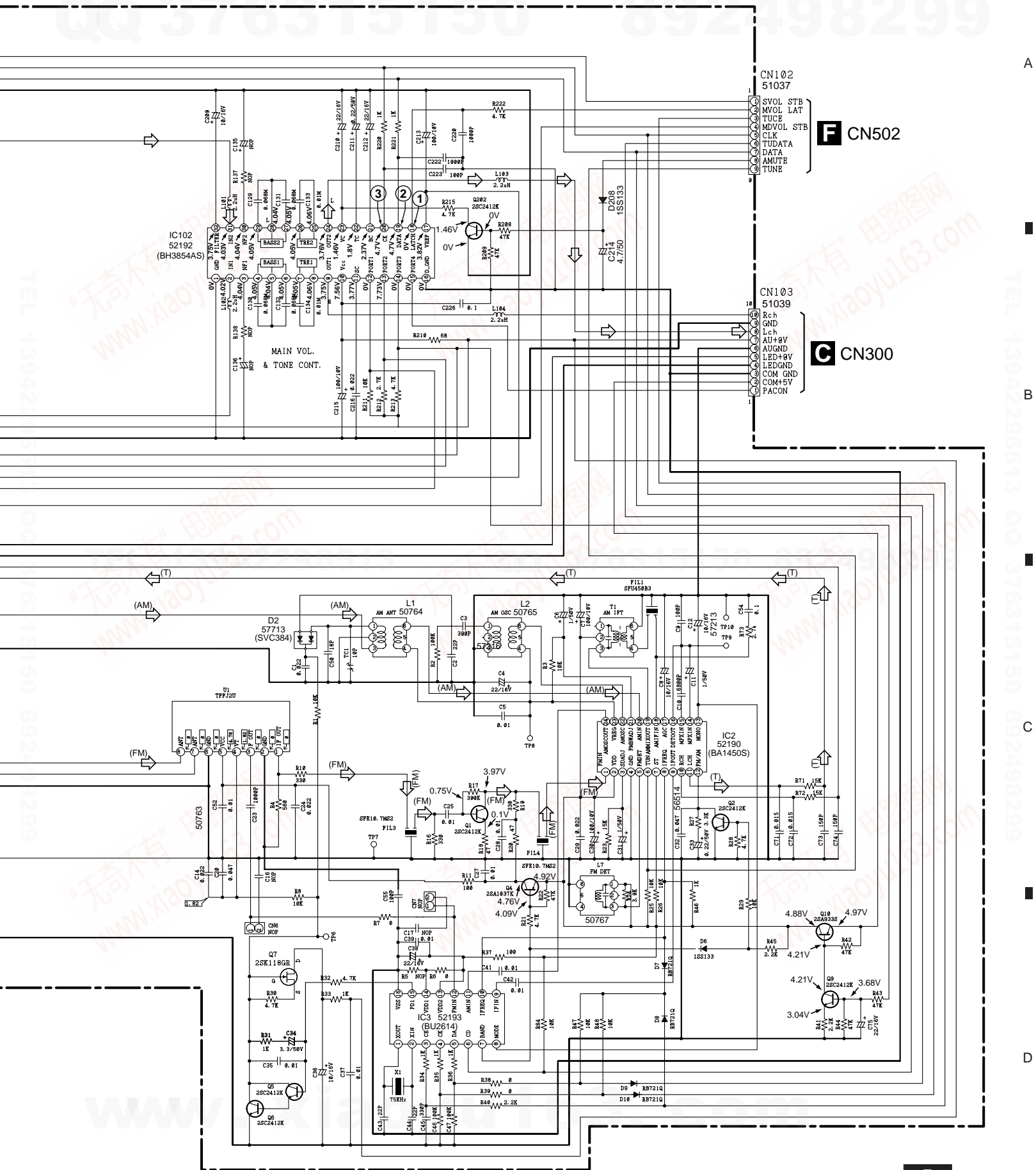


3.2.1.2 TUNER PCB

A TUNER PCB (66675)

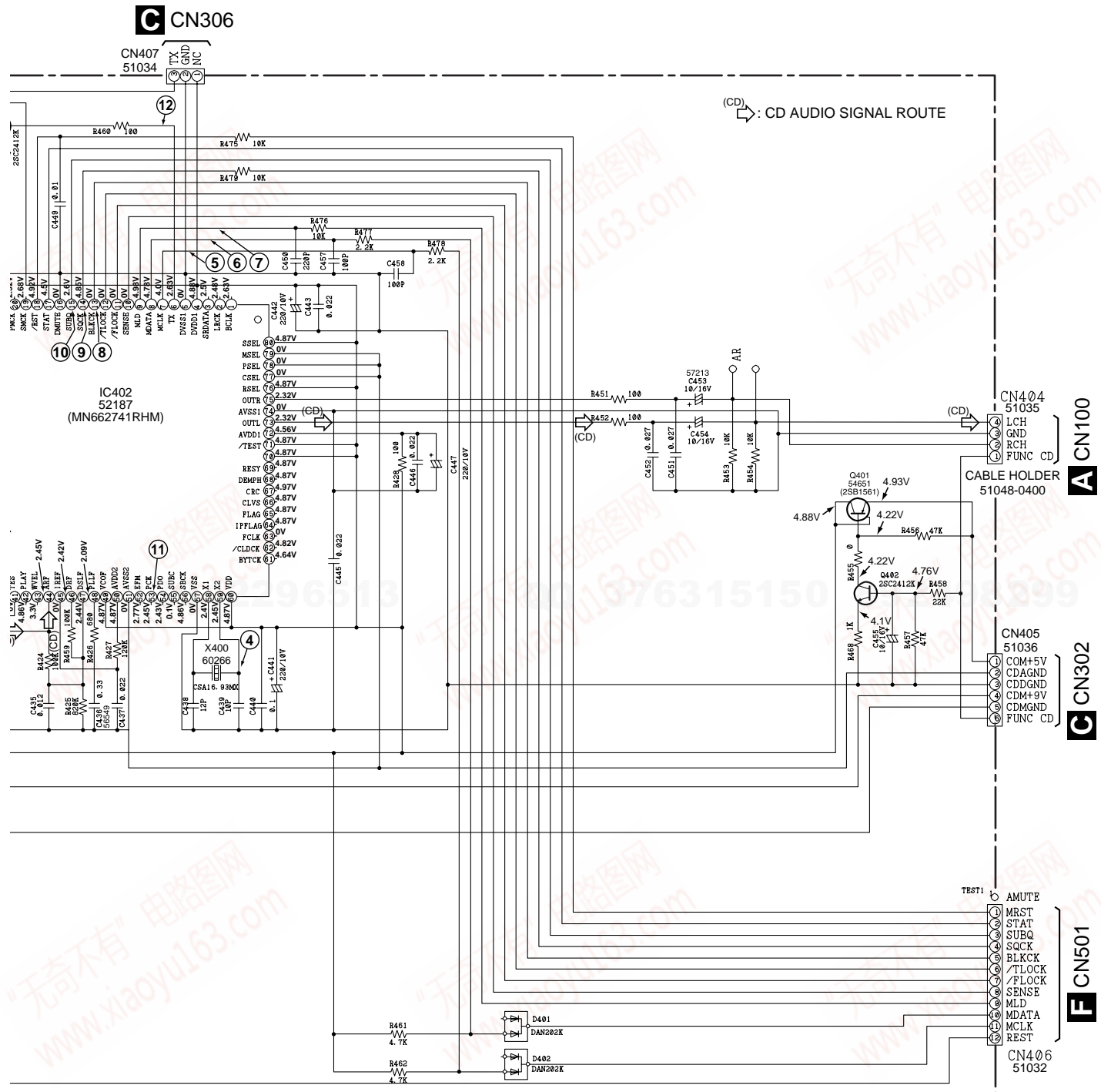


- : AUDIO SIGNAL ROUTE
- (CD): CD AUDIO SIGNAL ROUTE
- (MD): MD AUDIO SIGNAL ROUTE
- (MD REC): MD REC ANALOG AUDIO SIGNAL ROUTE
- (AM): AM SIGNAL ROUTE
- (FM): FM SIGNAL ROUTE
- (T): TUNER AUDIO SIGNAL ROUTE



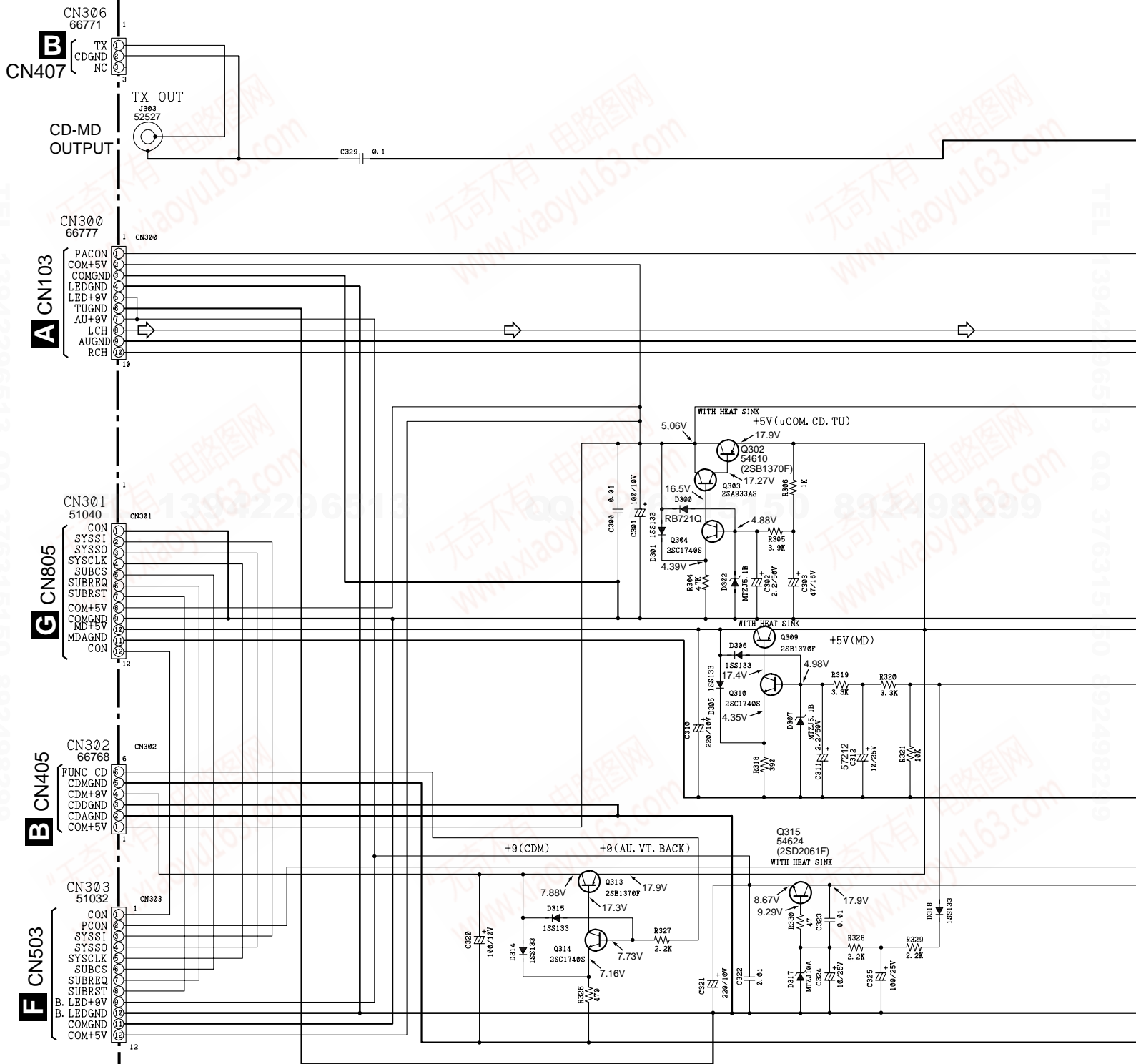






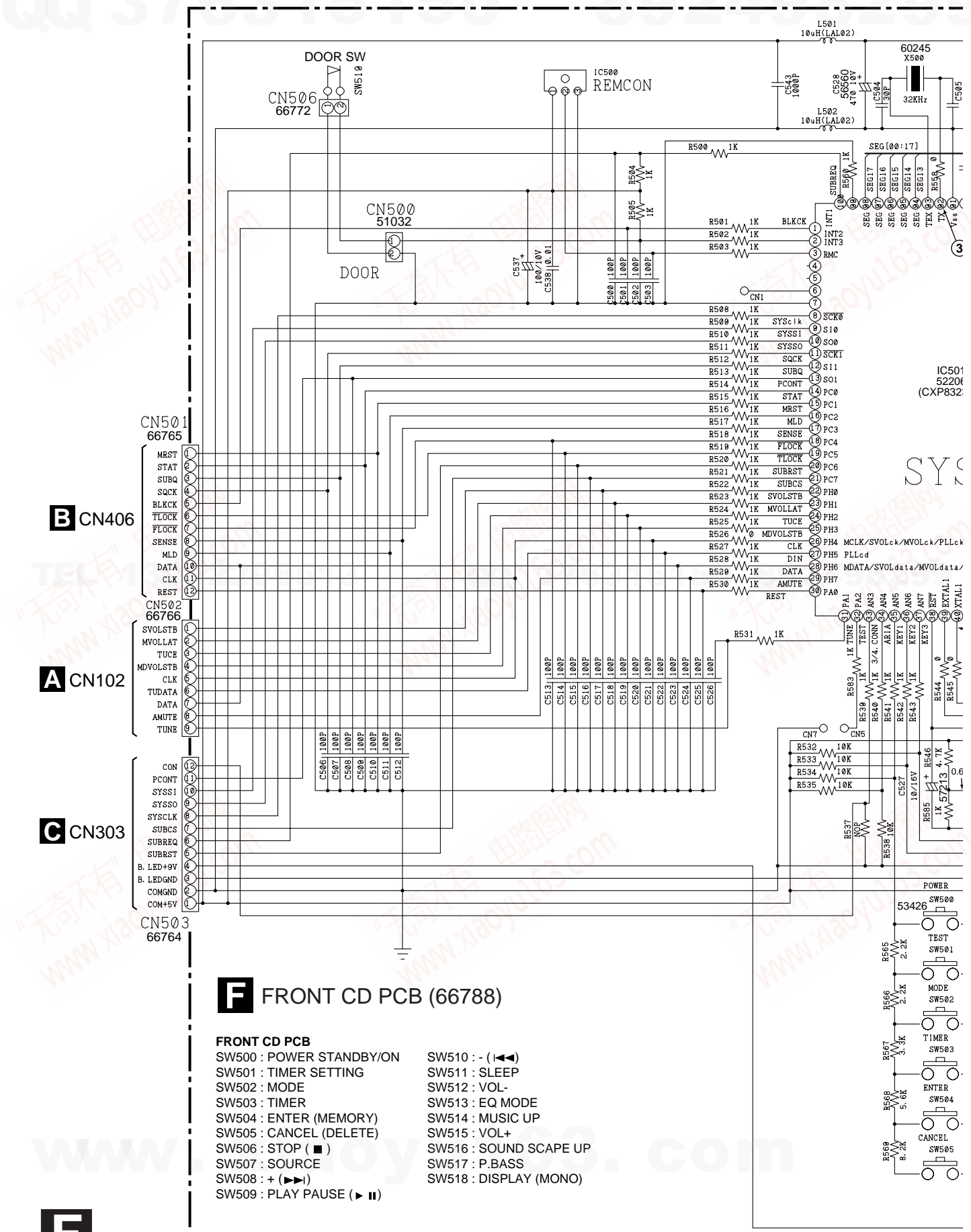
3.2.1.4 POWER, FUSE and HEADPHONE PCB

C POWER PCB



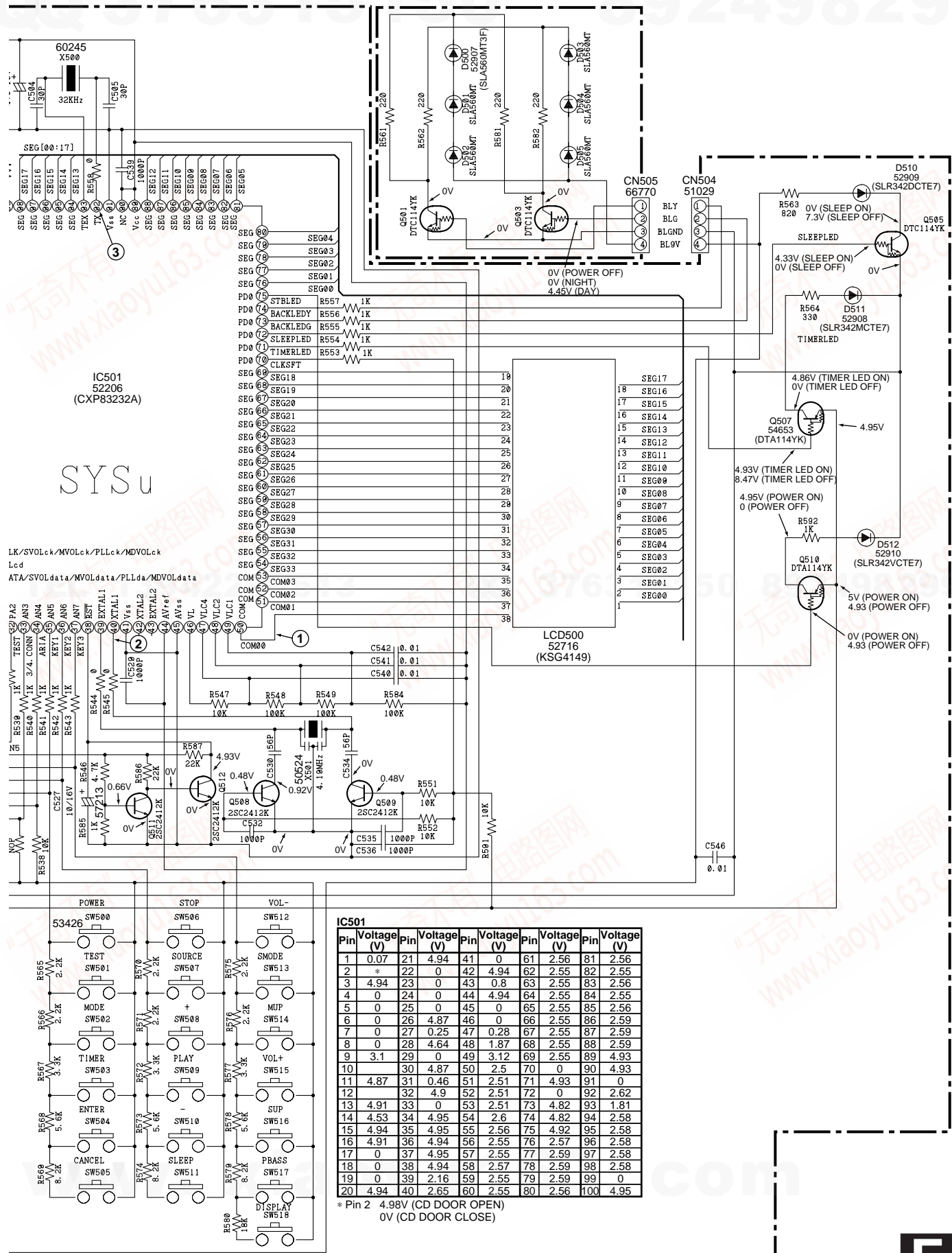


3.2.1.5 FRONT CD PCB





## X-HMD01, X-HMD03, X-HX99, X-HX05



A

B

C

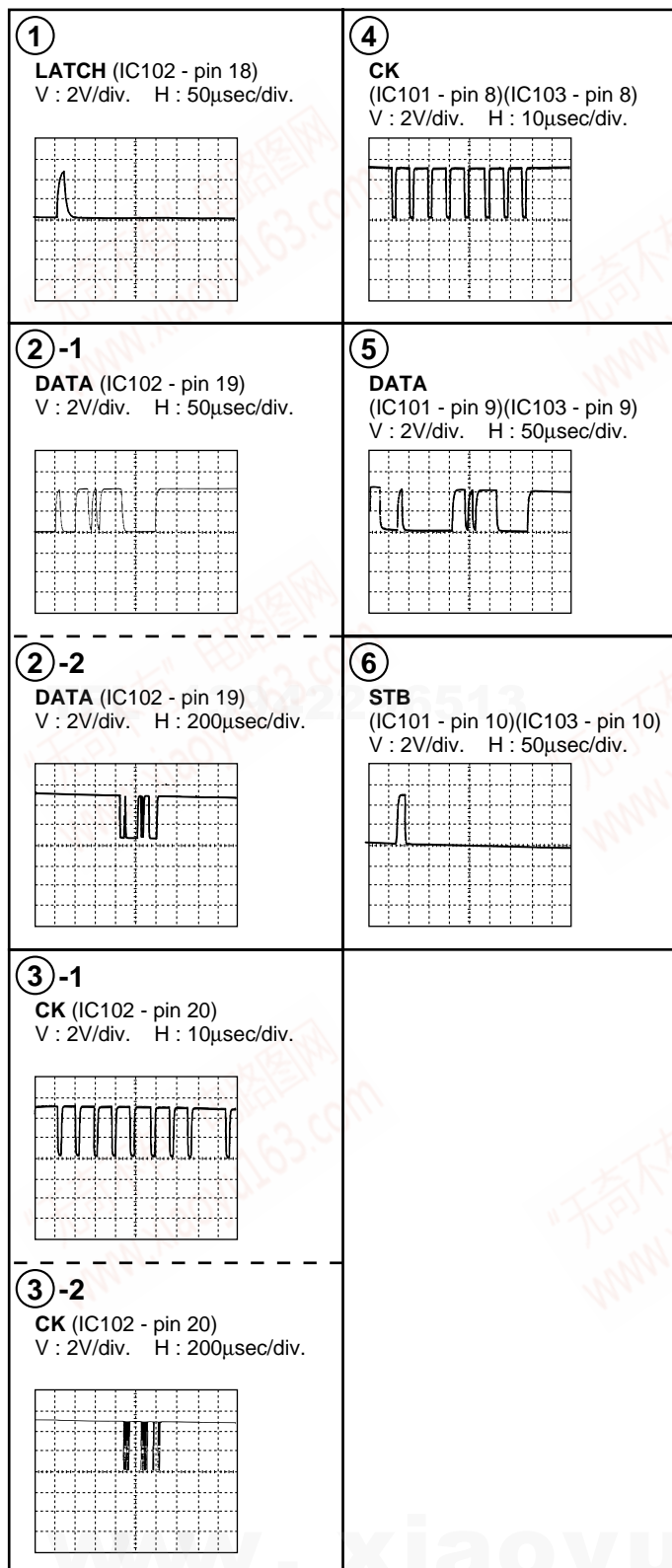
D

# X-HMD01, X-HMD03, X-HX99, X-HX05

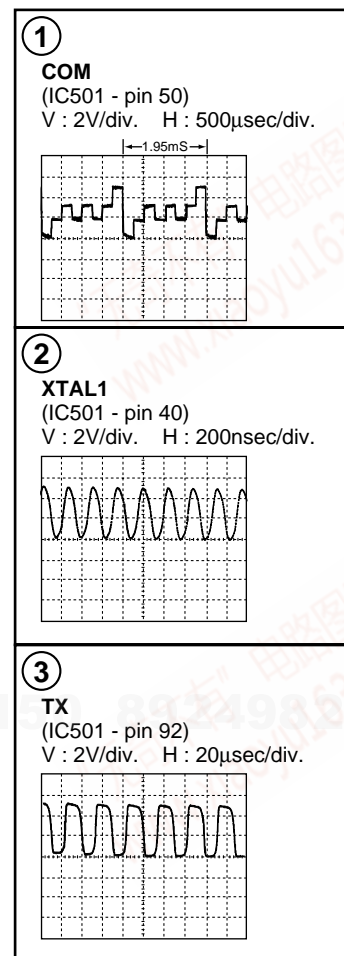
## WAVEFORMS (CD RECEIVER)

Note : The encircled numbers denote measuring point in the schematic diagram.

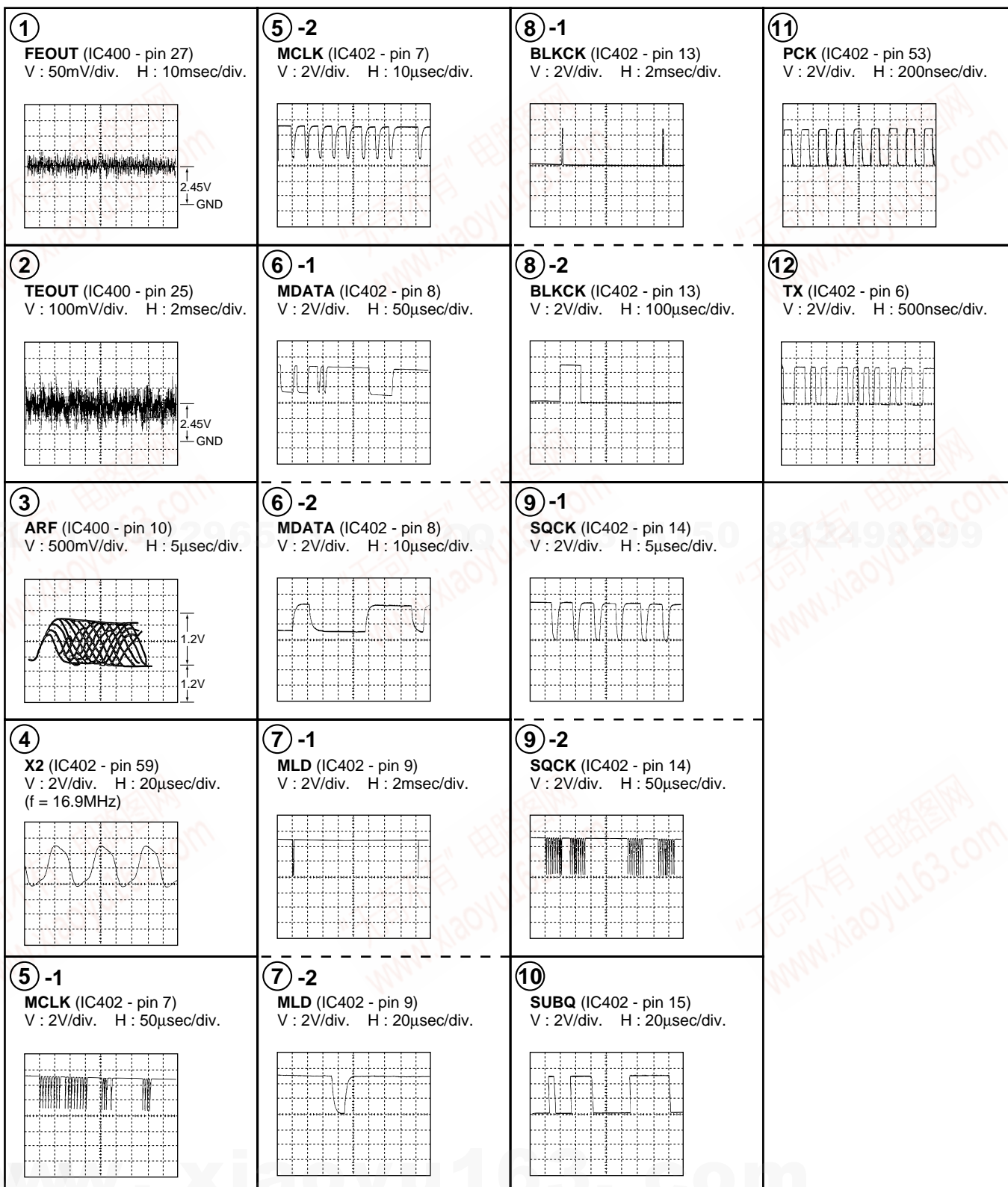
### A TUNER PCB



### F FRONT CD PCB



# B CD PCB



X-HMD01, X-HMD03, X-HX99, X-HX05

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TEL 13942296513 QQ 376315150 892498299

TEL 13942296513 QQ 376315150 892498299

TEL 13942296513

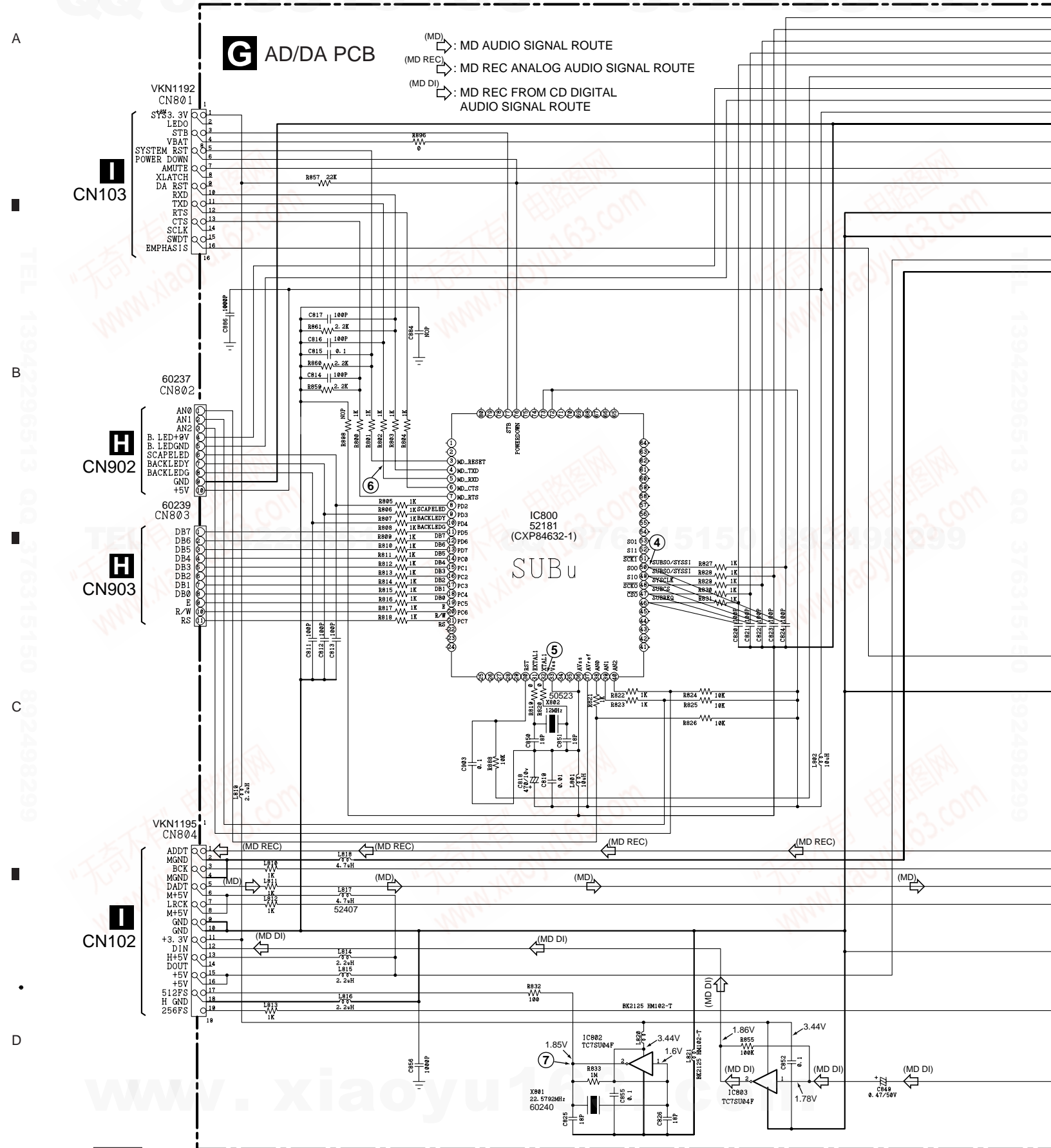
QQ 376315150 892498299

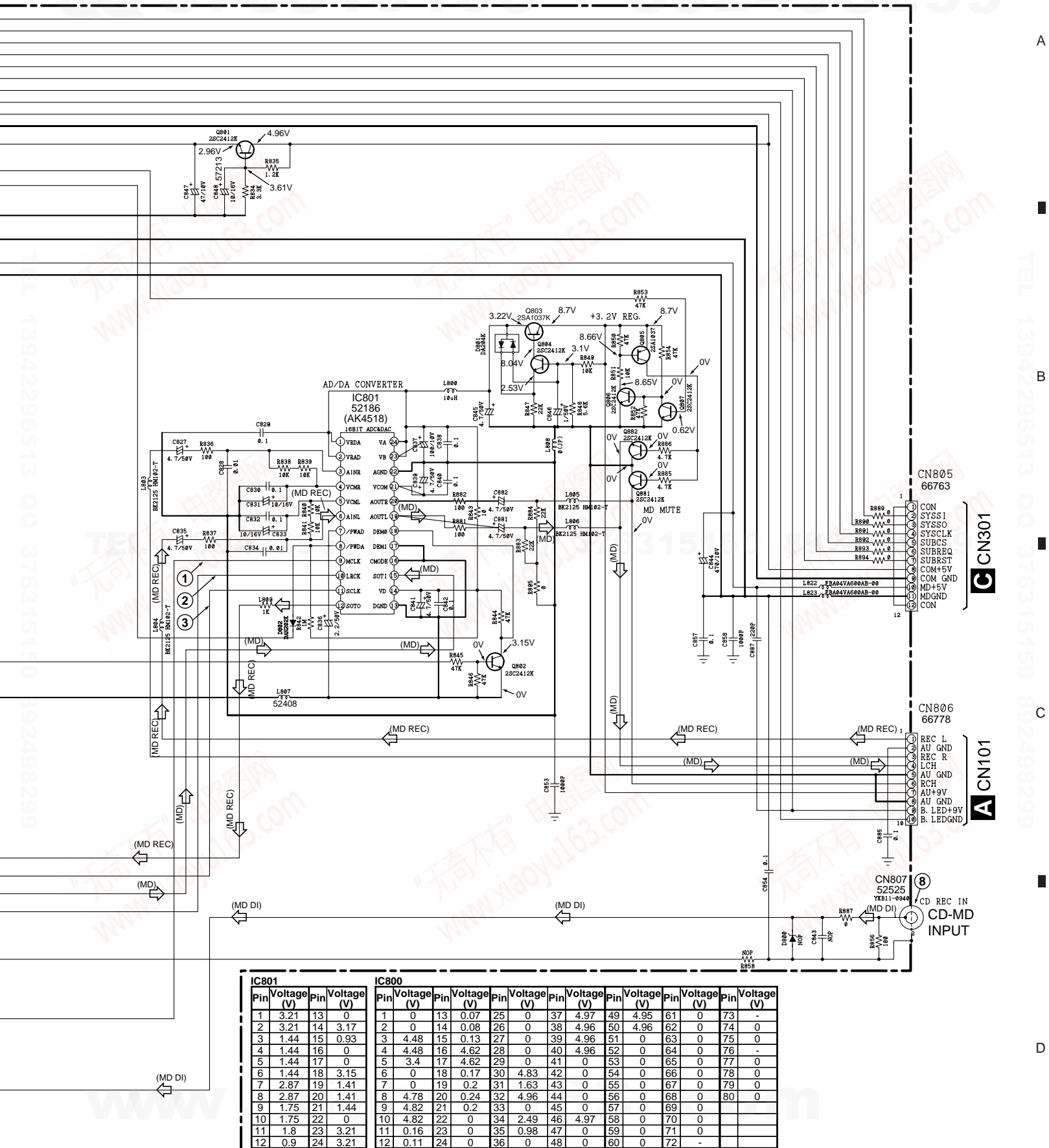
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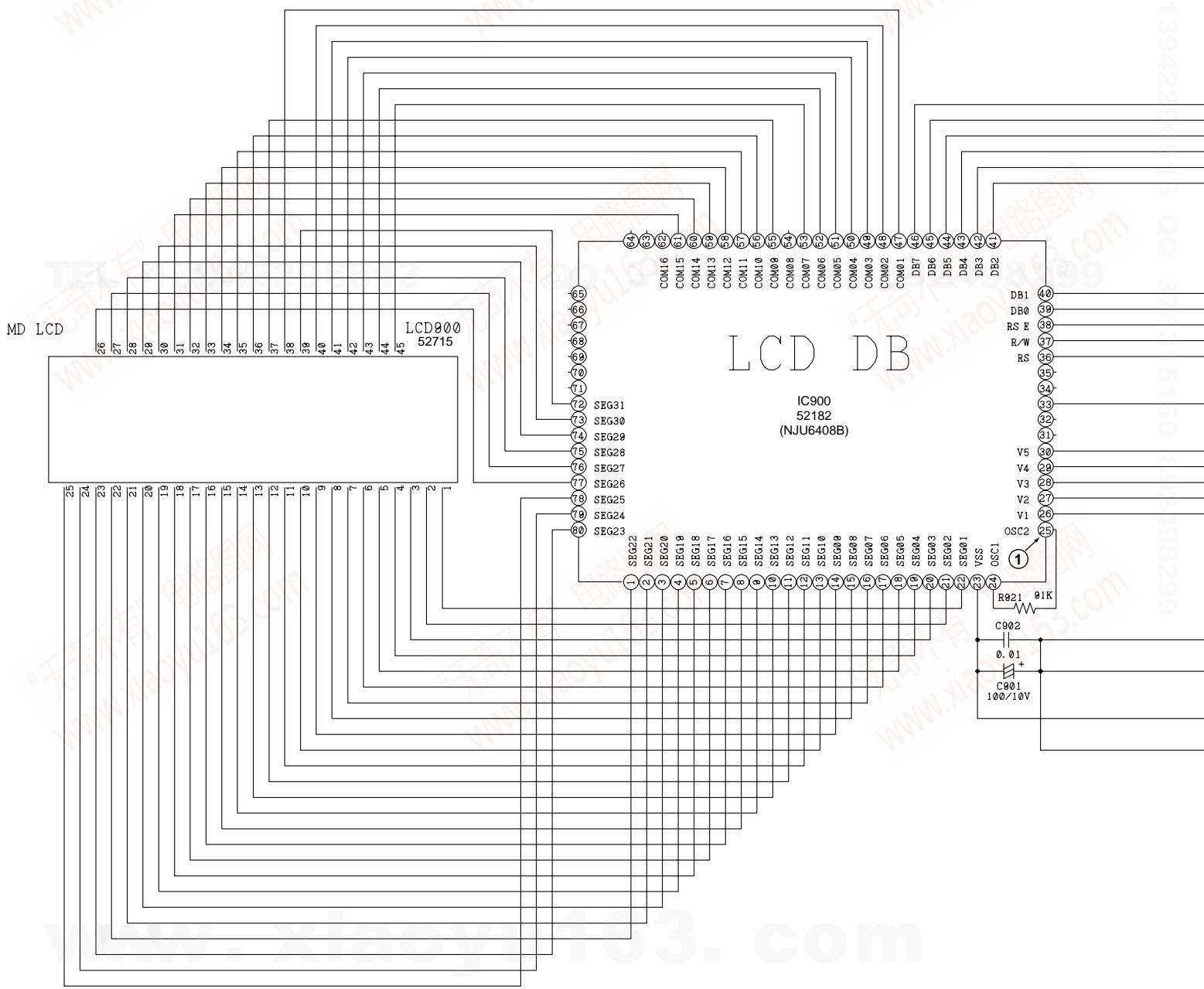
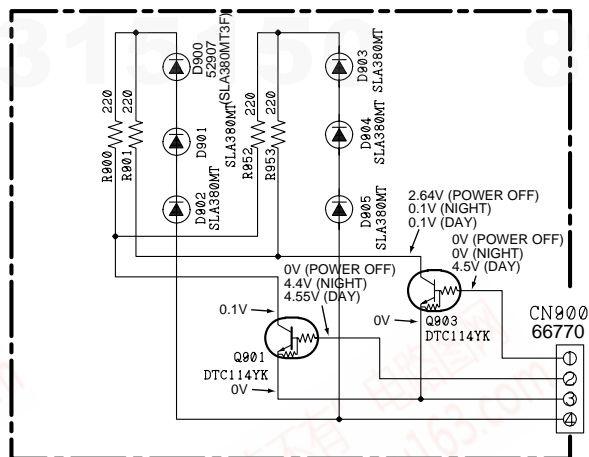
### 3.2.2.2 AD/DA PCB





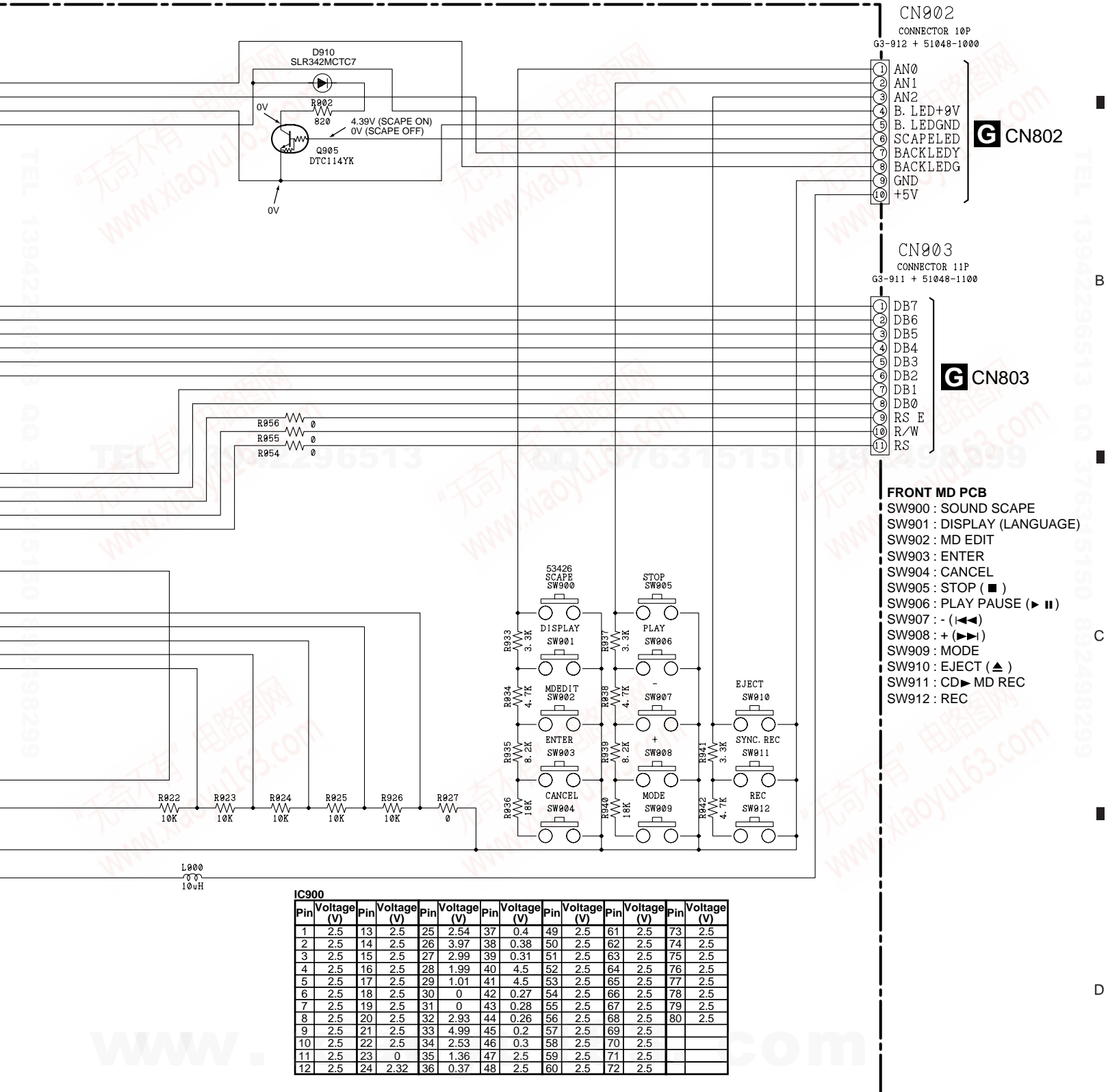
### 3.2.2.3 FRONT MD PCB

#### FRONT MD PCB



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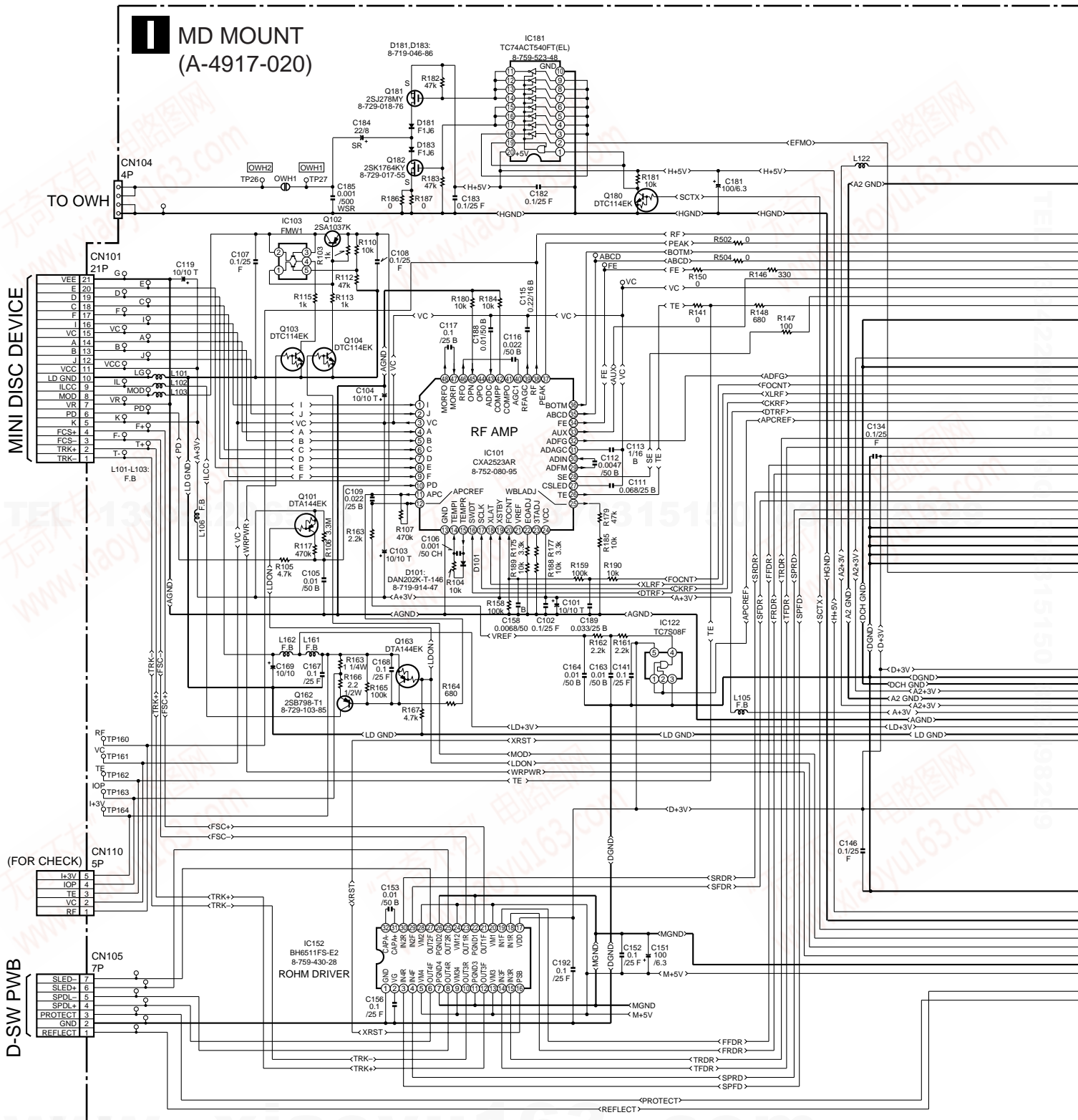
3.2.2.4 MD MOUNT

A

B

C

D



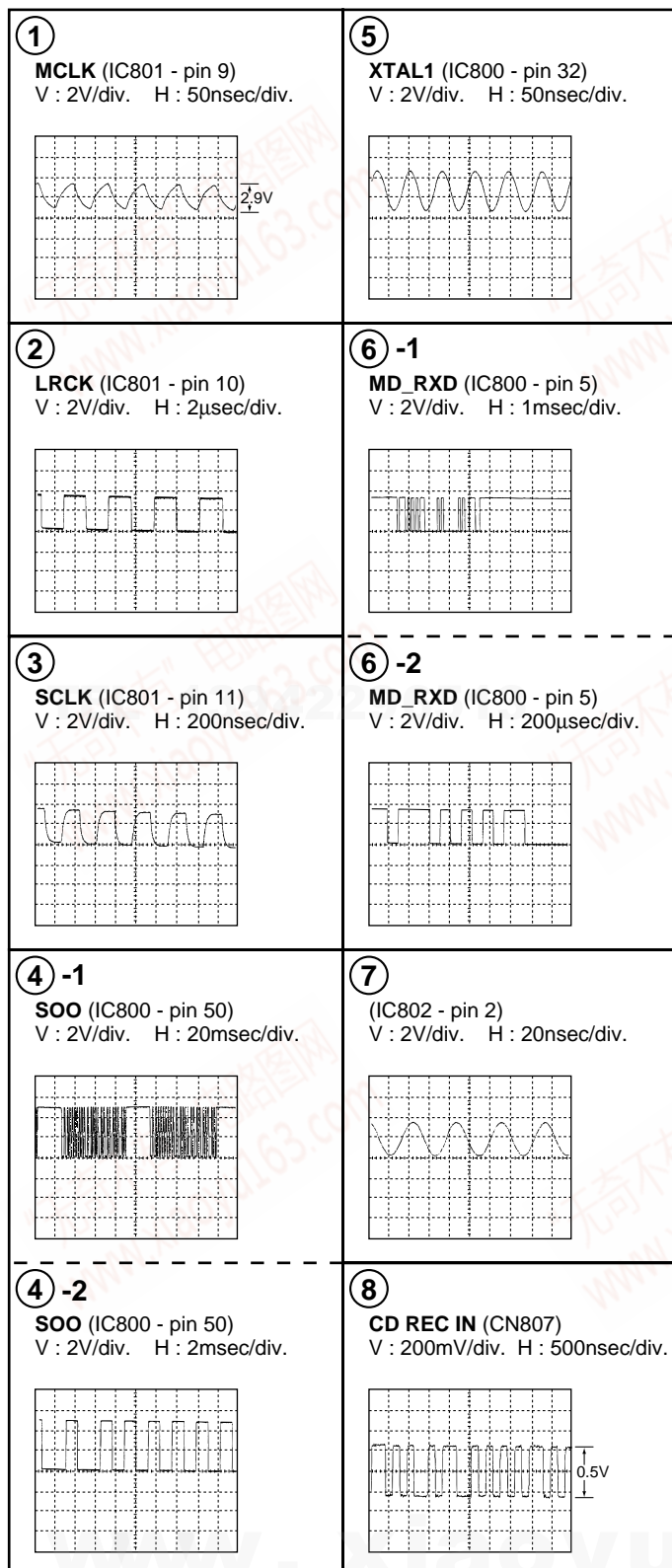


# X-HMD01, X-HMD03, X-HX99, X-HX05

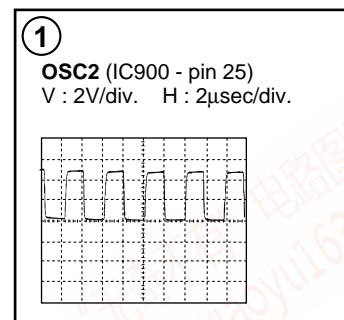
## WAVEFORMS (MD RECORDER)

Note : The encircled numbers denote measuring point in the schematic diagram.

### G AD/DA PCB




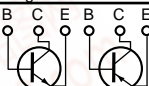

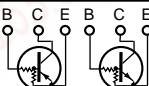

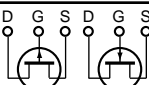

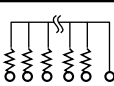


### H FRONT MD PCB



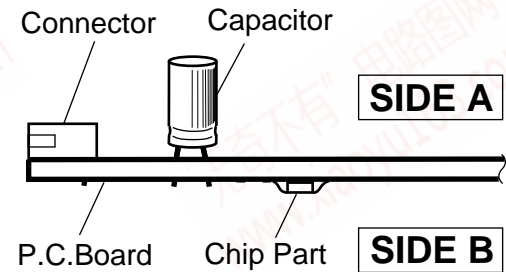
## 4. PCB CONNECTION DIAGRAM

### NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.  
For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



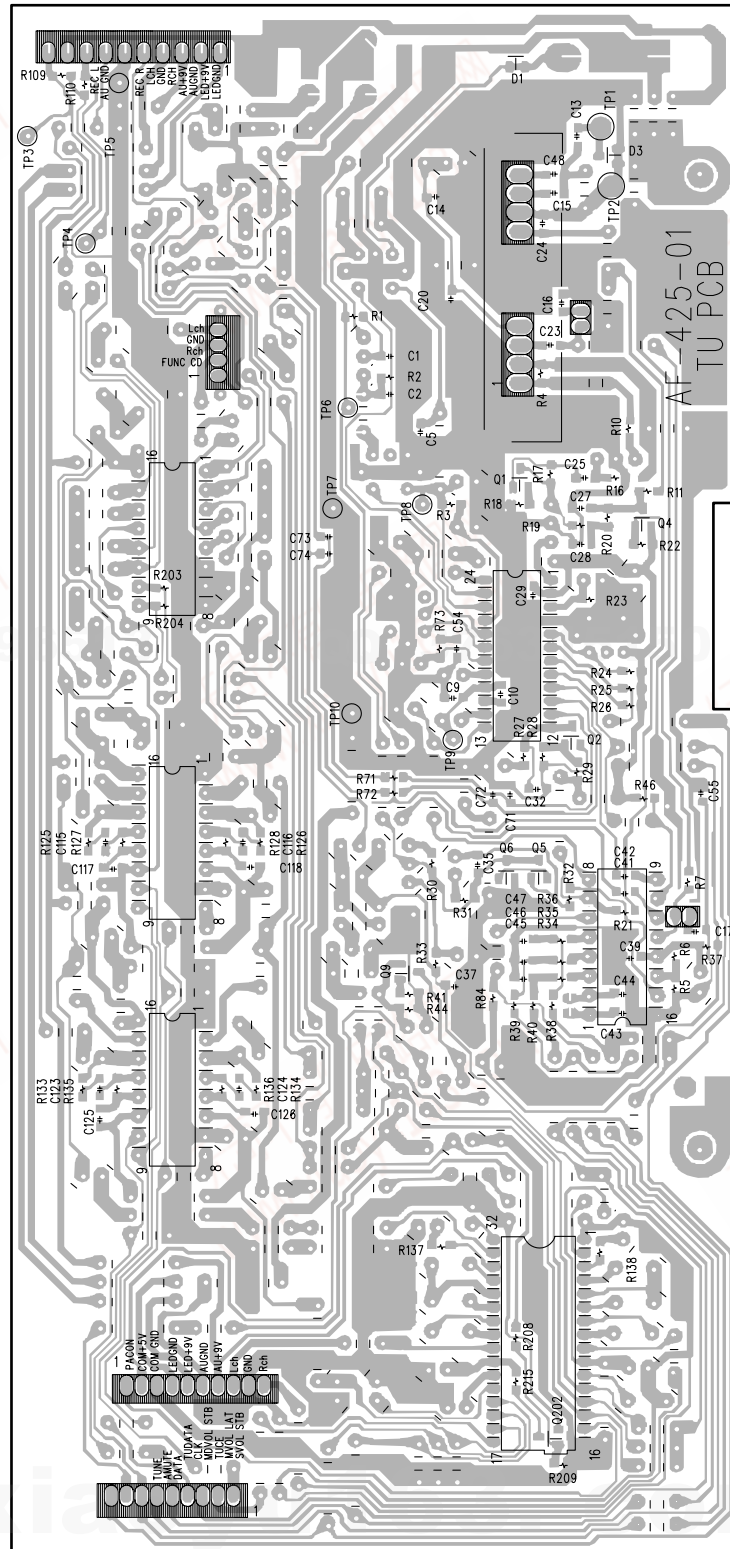




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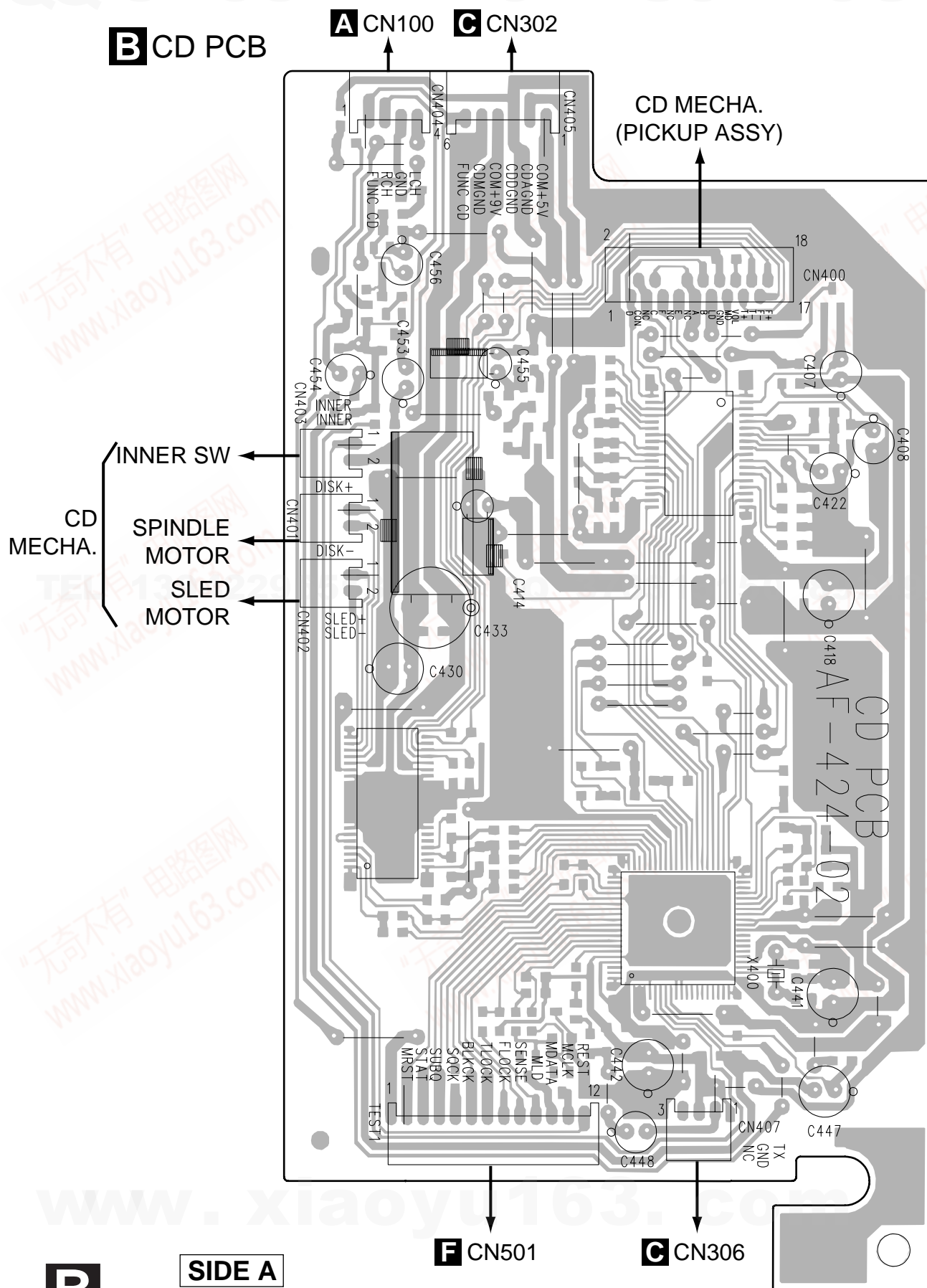
# A TUNER PCB



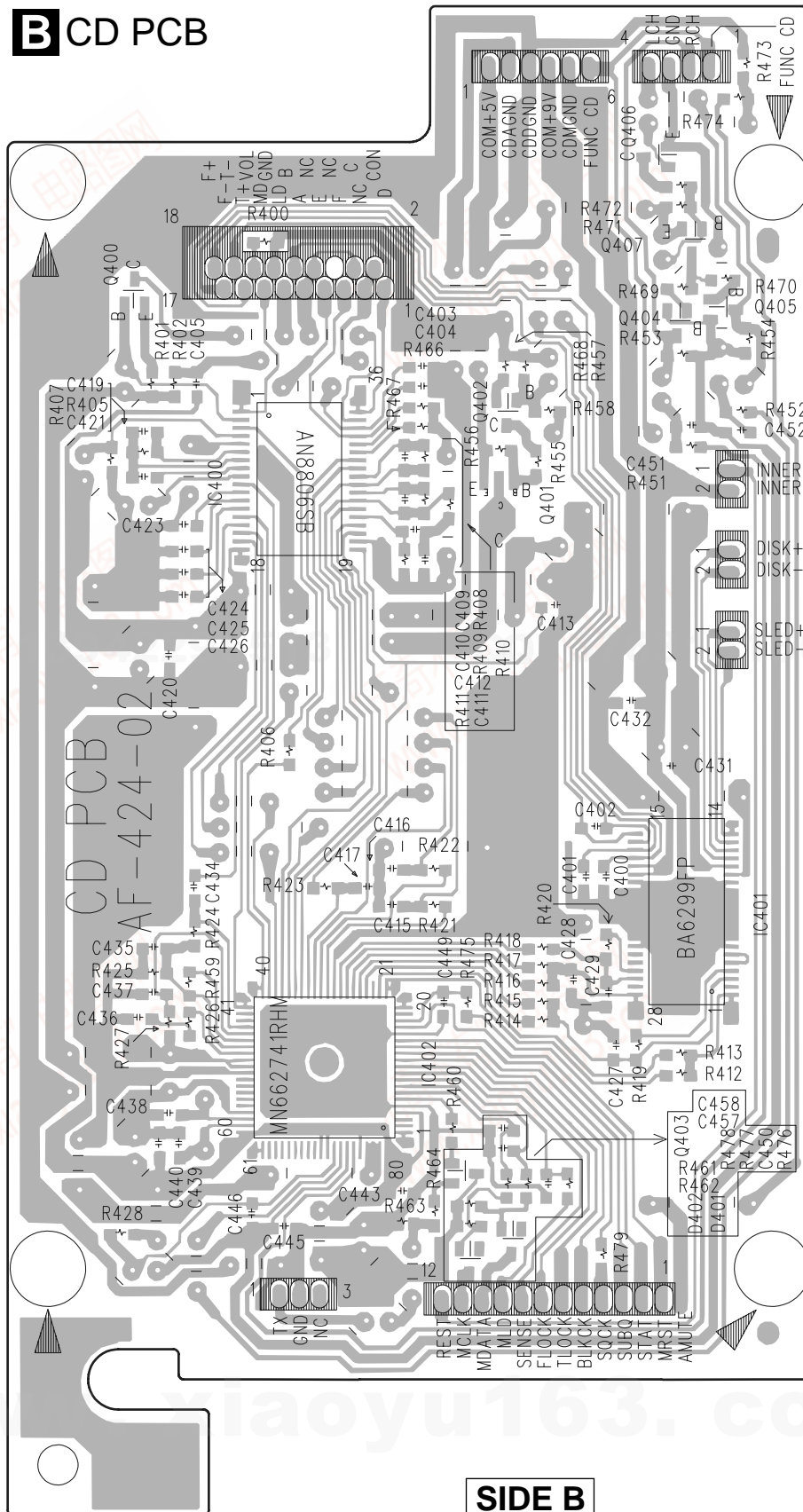
SIDE B

A

4.1.2 CD PCB



**B** CD PCB



Q406

Q407

Q404 Q405

Q400

Q402

IC400 Q401

IC401

IC402

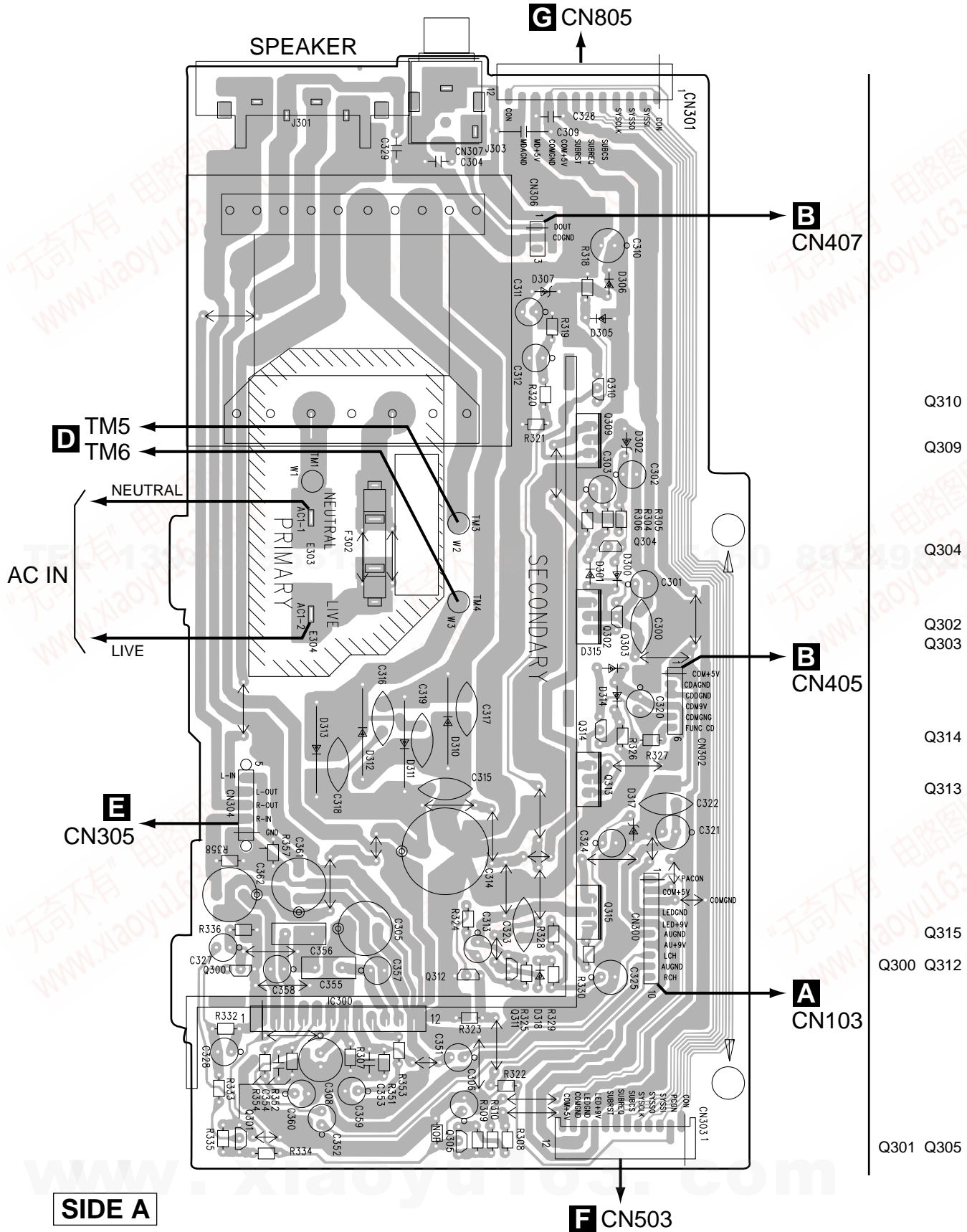
Q403

## SIDE B

**B**

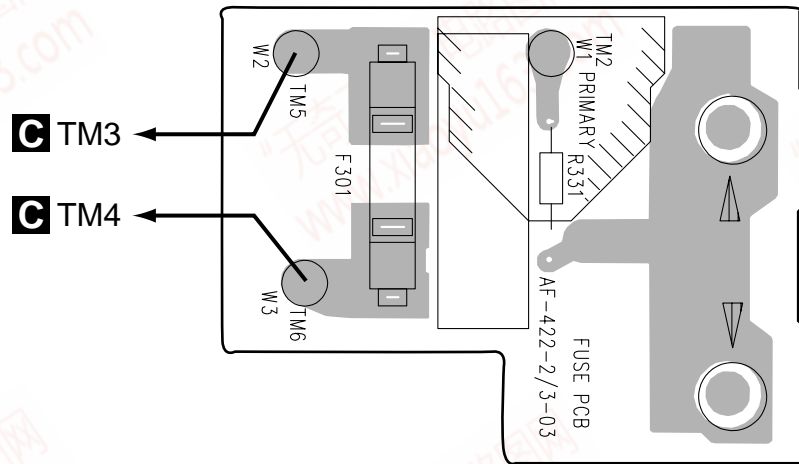
4.1.3 POWER PCB

C POWER PCB

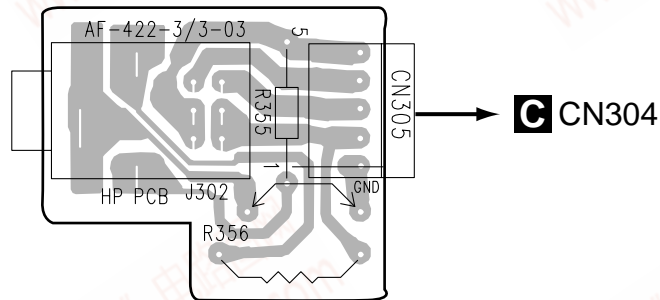


#### 4.1.4 FUSE and HEADPHONE PCB

**D** FUSE PCB



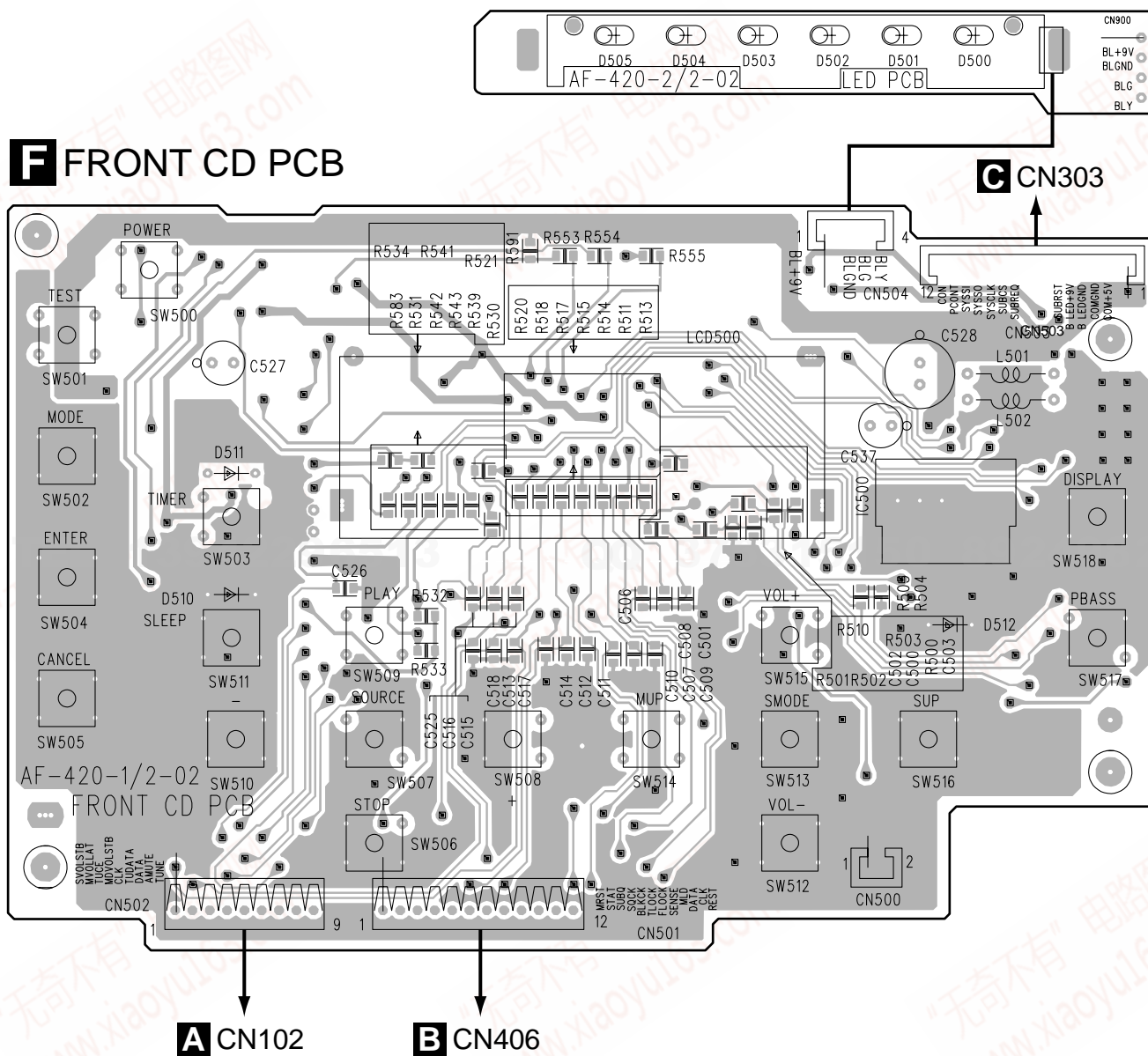
**E** HEADPHONE PCB



**SIDE A**



4.1.5 FRONT CD PCB



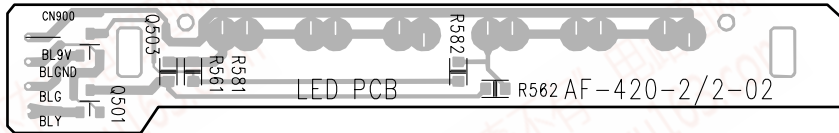
Note : is connected to side B.

**SIDE A**

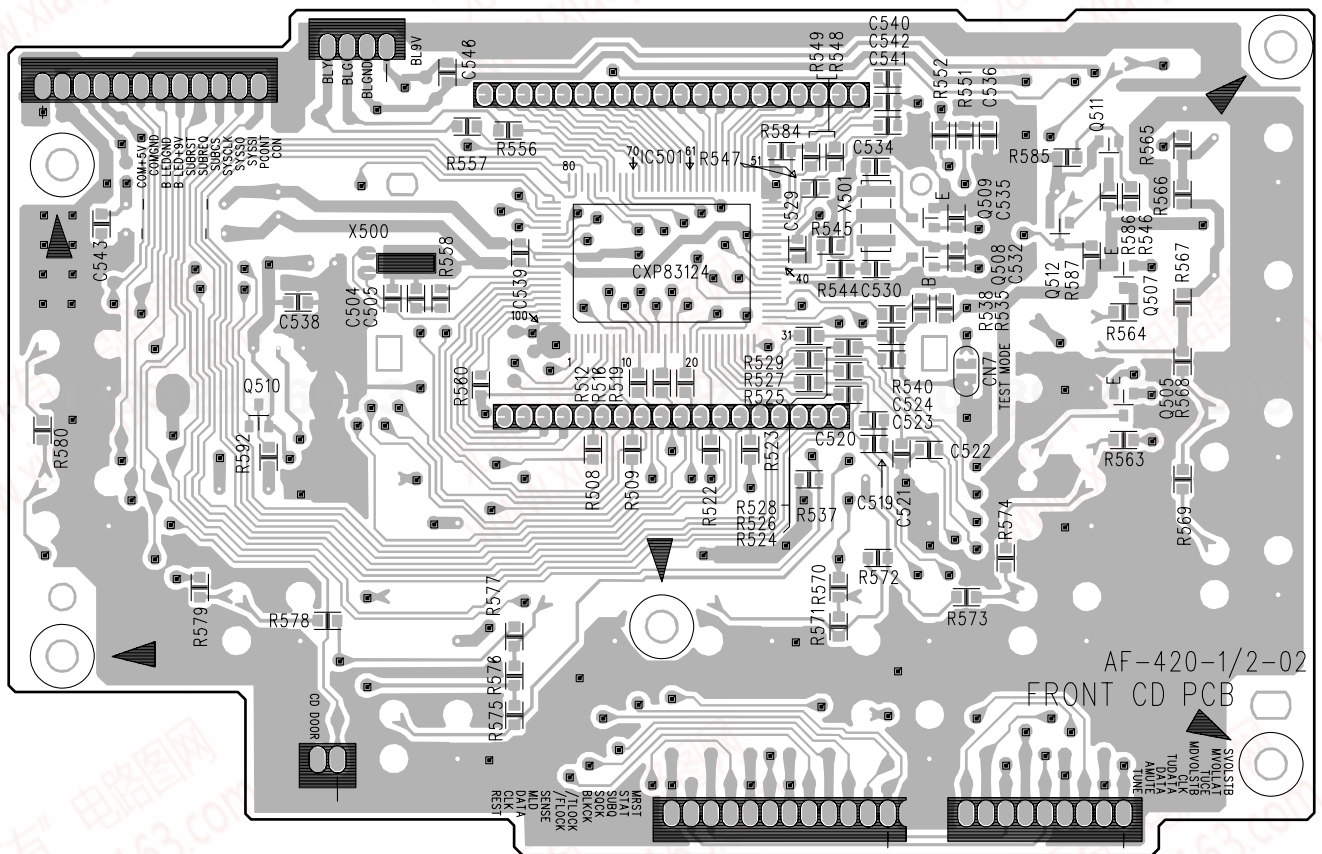
QQ 376315150

892498299

Q503  
Q501



**F** FRONT CD PCB



Q510

IC501

Q509  
Q508

Q511  
Q512  
Q507  
Q505

Note : is connected to side A.

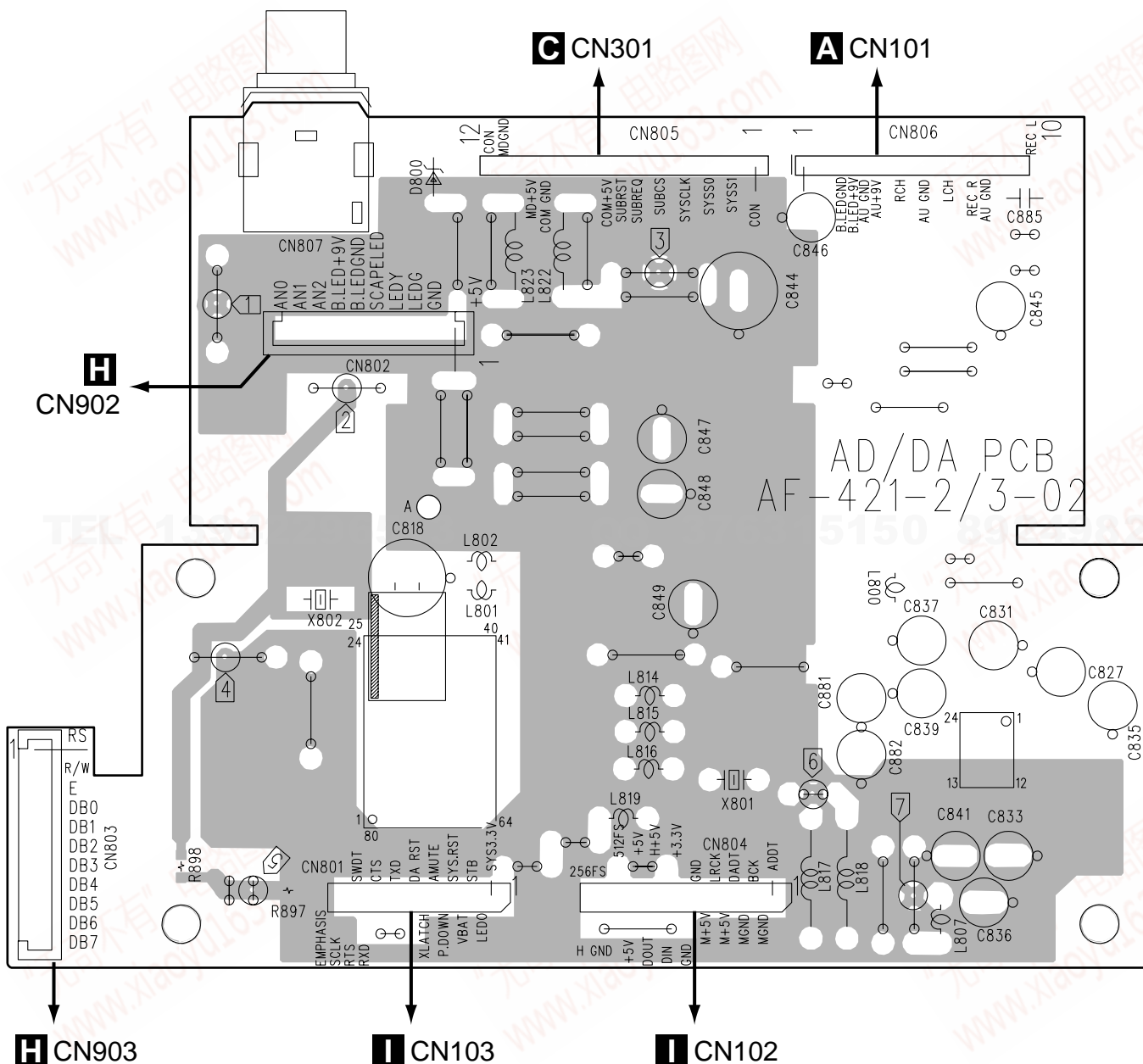
**SIDE B**

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## 4.2 MD RECORDER

### 4.2.1 AD/DA PCB

#### G AD/DA PCB

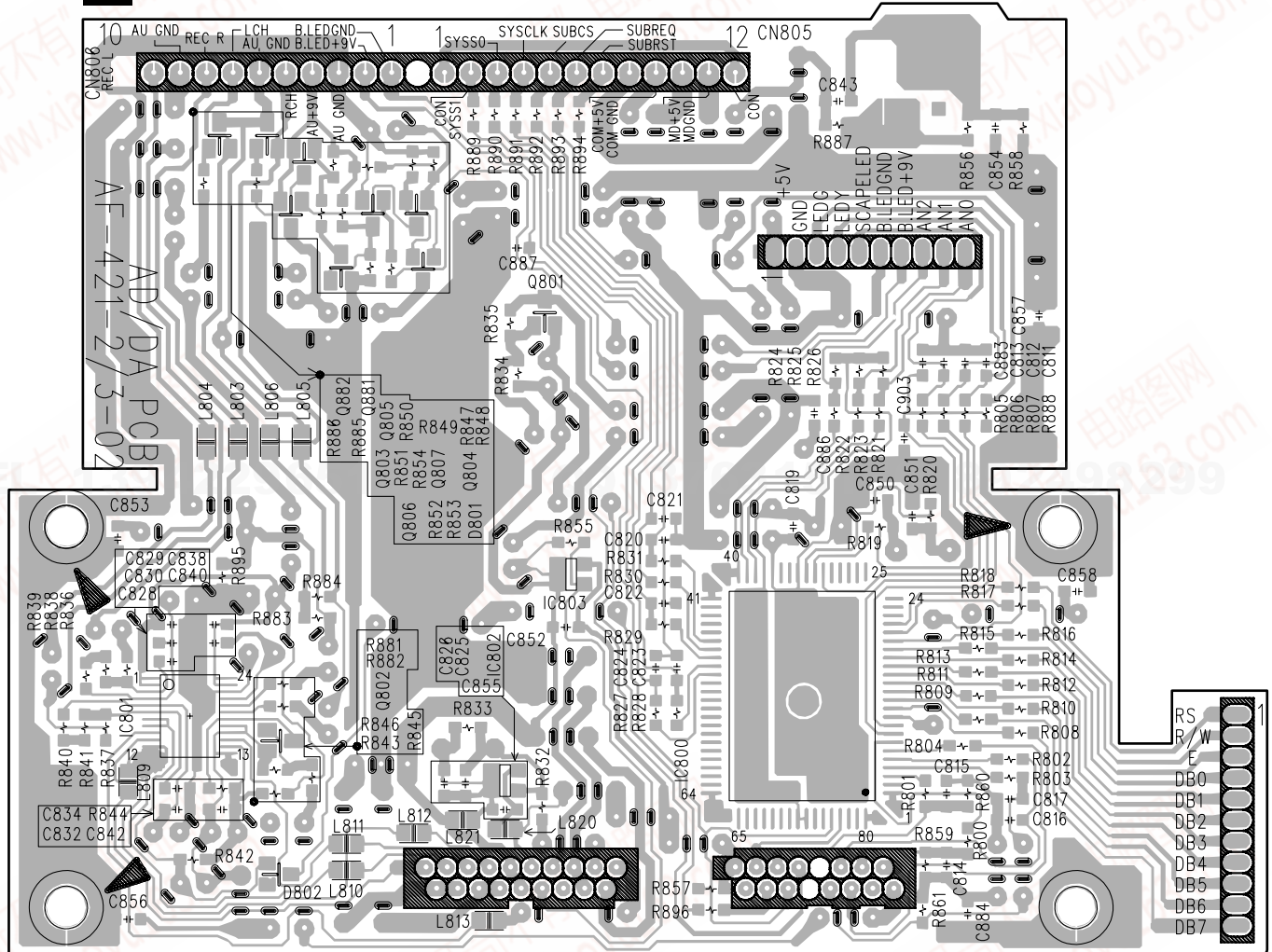


SIDE A

QQ 376315150

892498299

## G AD/DA PCB



Q882 Q881 Q805  
Q803 Q807 Q804  
Q806 Q801

IC801 Q802

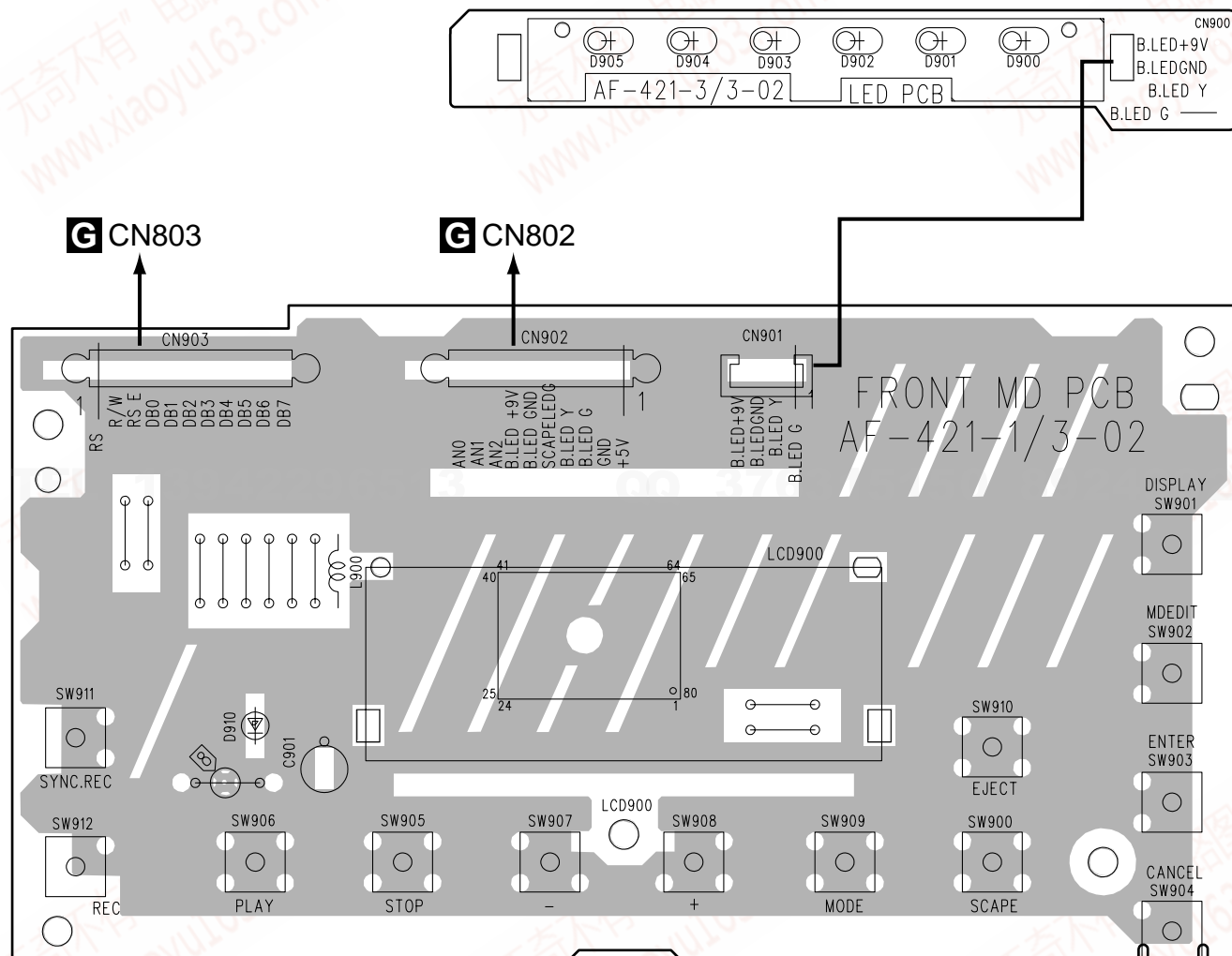
IC802

IC800

**SIDE B**

4.2.2 FRONT MD PCB

**H** FRONT MD PCB



**SIDE A**

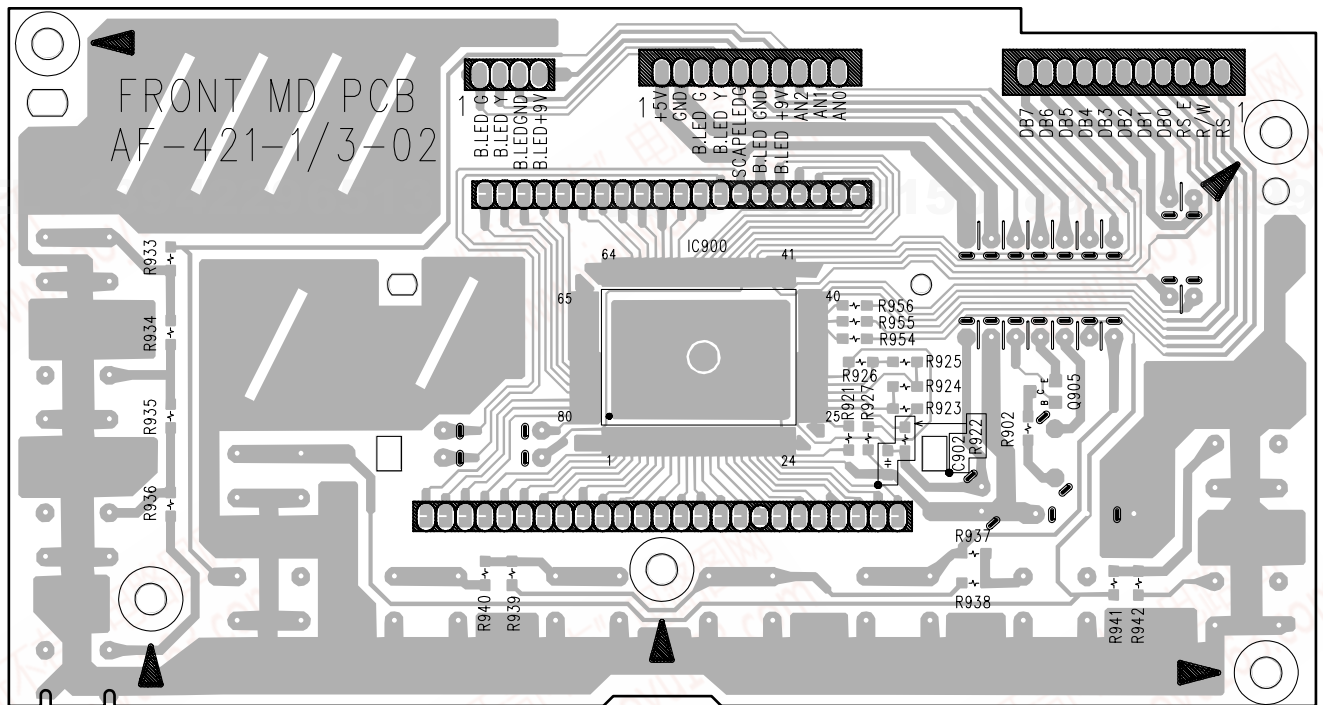
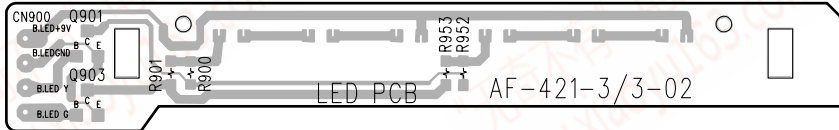


QQ 376315150

892498299

## H FRONT MD PCB

Q901  
Q903



Q905

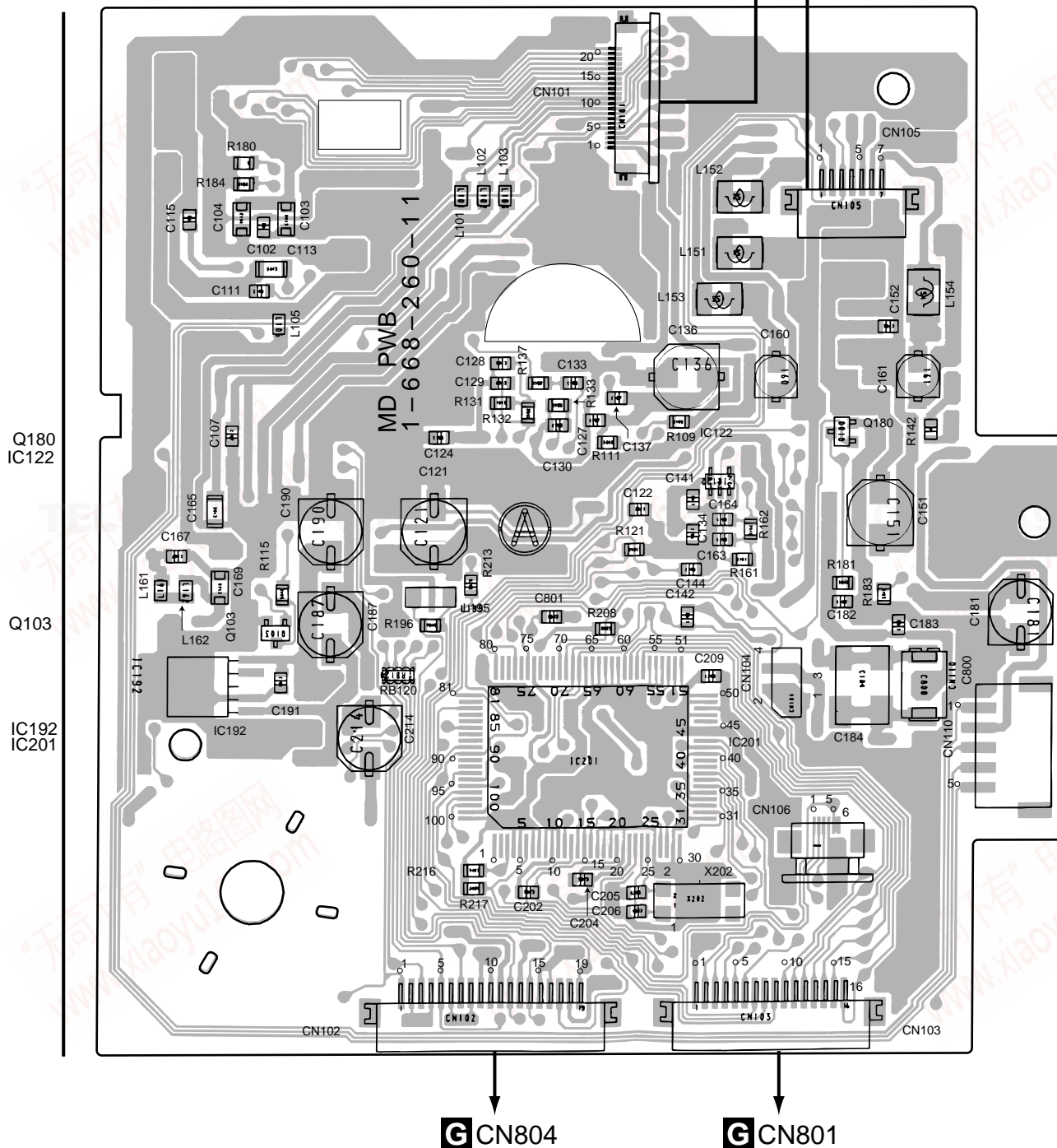
SIDE B

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### 4.2.3 MD MOUNT

#### MD MOUNT

MD MECHANISM

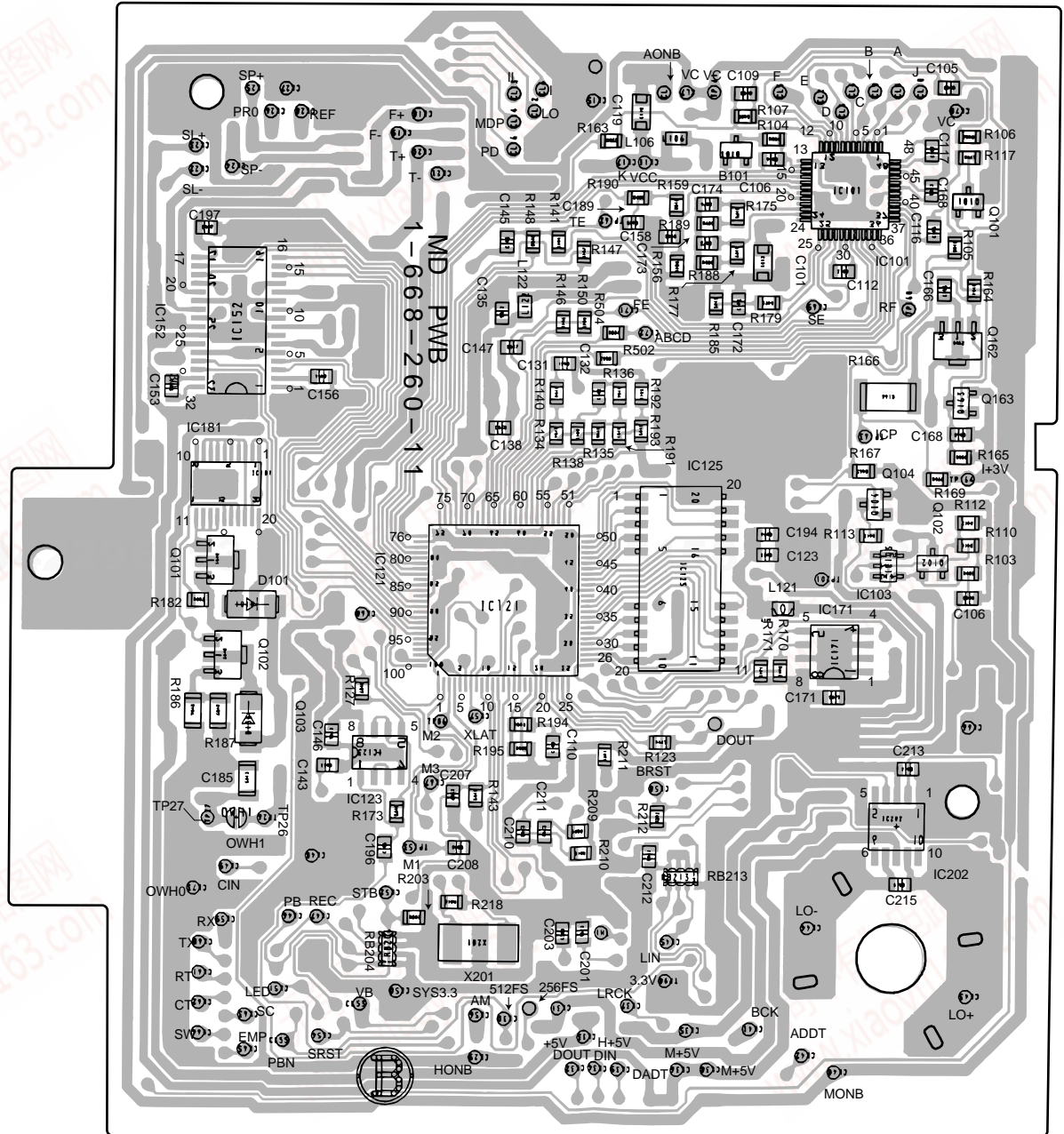


SIDE A

QQ 376315150 892498299

# MD MOUNT

Q101  
IC101  
IC152  
Q162  
Q163  
IC181  
IC125  
Q104  
Q102  
Q101  
IC121  
IC103  
IC171  
Q102  
Q103  
IC123  
IC202



SIDE B

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# X-HMD01, X-HMD03, X-HX99, X-HX05

## 5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

●The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part.

Therefore, when replacing, be sure to use parts of identical designation.

●When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560  $\Omega$   $\rightarrow$   $56 \times 10^1$   $\rightarrow$  561 ..... RD1/4PU  $\begin{bmatrix} 5 & 6 & 1 \end{bmatrix}$  J  
 47k  $\Omega$   $\rightarrow$   $47 \times 10^3$   $\rightarrow$  473 ..... RD1/4PU  $\begin{bmatrix} 4 & 7 & 3 \end{bmatrix}$  J  
 0.5  $\Omega$   $\rightarrow$  R50 ..... RN2H  $\begin{bmatrix} R & 5 & 0 \end{bmatrix}$  K  
 1  $\Omega$   $\rightarrow$  1R0 ..... RS1P  $\begin{bmatrix} 1 & R & 0 \end{bmatrix}$  K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k  $\Omega$   $\rightarrow$   $562 \times 10^1$   $\rightarrow$  5621 ..... RN1/4PC  $\begin{bmatrix} 5 & 6 & 2 & 1 \end{bmatrix}$  F

Mark	No.	Description	Part No.
------	-----	-------------	----------

### LIST OF ASSEMBLIES

NSP	RECEIVER		
	TUNER PCB		66675
	CD PCB		66786
	AMP COMBI PCB		66789
	POWER PCB	.....	
	FUSE PCB	.....	
	HEADPHONE PCB	.....	
	FRONT CD PCB		66788
NSP	MD RECORDER		
	MD COMBI PCB		66785
	AD/DA PCB	.....	
	FRONT MD PCB	.....	
	MD MECHA.		KMK-260AAB
	MD MOUNT		A-4917-020
	L-SW PWB		1-668-261-11
	D-SW PWB		1-668-262-11

### A TUNER PCB

#### SEMICONDUCTORS

IC101,IC103 (TC9260P)	52189
IC2 (BA1450S)	52190
IC102 (BH3854AS)	52192
IC3 (BU2614)	52193
U1	TFFJ2U581A
IC100	TC4052BP
Q7	2SK118GR
Q4	2SA1037AK
Q10,Q201	2SA933S
Q101-Q104,Q200	2SC1740S
Q1,Q2,Q5,Q6,Q9,Q202	2SC2412K
Q3 (2SC2413KT146P)	54652
D6,D201-D207,D208	1SS133
D4,D5 (SVC234)	57712
D2 (SVC384)	57713
D1,D3	DA204K
D7-D10 (RB721Q)	51435

#### COIL AND FILTER

L1	AM ANT	839741
L2	AM OSC	839739
L7	FM DET	839737
T1	AM IFT	839740
L100-L104	AXIAL INDUCTOR	LAU2R2J
C13	CHIP INDUCTOR	LK2125 52411

Mark	No.	Description	Part No.
------	-----	-------------	----------

### CAPACITORS

C20,C32 (0.047 $\mu$ F/2V)	56514
C8,C12,C36,C209 (10 $\mu$ F/16V)	57213
C4,C38,C75,C210,C212 (22 $\mu$ F/16V)	57216
C50	CCPUSL180J50
C43,C44	CCSQCH220J50
C9,C15,C55	CCSQSL101J50
C73,C74	CCSQSL151J50
C23	CCSQSL2R0C50
C22	CCSQSL3R0C50
C2	CCSQUJ220J50
C7,C30,C201,C202,C205,C208	CEAT101M10
C213,C215	CEAT101M10
C6,C11,C31	CEAT1R0M50
C107,C108	CEAT2R2M50
C1	CKSQYBJ104K50
C34	CEAT3R3M50
C203,C206	CEAT470M10
C101-C106,C109-C112,C121,C122	CEAT4R7M50
C127,C128,C214,C221	CEAT4R7M50
C33,C211	CEATR22M50
C223-C225	CKPUYB101K50
C51,C220,C222	CKPUYB102K50
C53,C204,C226	CKPUYF104Z50
C20,C32,C207	CKPUYF473Z50
C49,C52,C200	CKPUYY103M16
C16,C17,C40	CKSQYB102K50
C5,C25-C28,C35,C37,C39,C41,C42	CKSQYB103K50
C115,C116,C123,C124	CKSQYB152K50
C71,C72	CKSQYB153K50
C45	CKSQYB331K50
C10	CKSQYB682K50
C54,C117,C118,C125,C126	CKSQYF104Z50
C14,C24,C29	CKSQYF223Z50
C3	CQHA391J50
C133,C134	CQMBA103J50
C216	CQMBA223J50
C129-C132	CQMBA683J50
TC1 TRIMMER CAPACITOR	TZ03Z100ER



Mark	No.	Description	Part No.
<b>RESISTORS</b>			
	L8		RD1/8PU101J
	R220,R221		RD1/4PU102J
	R107		RD1/4PU153J
	R108		RD1/8PU153J
	R201,R211,R223,R224		RD1/8PU103J
	R45		RD1/8PU222J
	R8		RD1/8PU103J
	R101-R104		RD1/8PU273J
	R119,R120,R200		RD1/8PU104J
	R121,R122		RD1/8PU152J
	R105,R106,R213		RD1/8PU472J
	R222		RD1/4PU472J
	R205-R207		RD1/8PU471J
	R42,R43,R111-R118,R202		RD1/8PU473J
	R210		RD1/8PU680J
	R123,R124,R129,R130		RD1/8PU682J
	R212		RD1/8PU272J
	Other Resistors		RS1/10S□□□J

**OTHERS**

FIL3,FIL4 CERAMIC FILTER SFE10	50508A
FIL1 CERAMIC FILTER SFU45	50518
CN102 CONNECTOR (53254-0910)	51037
CN101 CONNECTOR (5268-10A)	51038
CN103 CONNECTOR (53253-1010)	51039
CN100 4P CABLE HOLDER	51048-0400
J100 PIN JACK YKC21-3035	52526
CN5 PUSH TERMINAL YKD21	60243
X1 CRYSTAL DT-381 (75kHz)	60244
4P CONNECTOR ASSY	66769

**B CD PCB**
**SEMICONDUCTORS**

IC400 (AN8806SB)	52103
IC401 (BA6299FP)	52118
IC402 (MN662741RHM)	52187
Q400	2SA1037K
Q402,Q403	2SC2412K
Q401 (2SB1561)	54651
D401,D402	DAN202K

**CAPACITORS**

C421 (0.1μF/25V)	56517
C436 (0.33μF/25V)	56549
C453-C455 (10μF/16V)	57212
C414 (22μF/16V)	57112
C439	CCSQCH100J50
C438	CCSQCH120J50
C450	CCSQSL221J50
C423,C457,C458	CCSQSL101J50
C410	CCSQSL331J50
C403,C404	CCSQSL471J50
C411	CKSQYB473K50
C419	CCSQSL5R0J50
C407	CEAT101M10
C433	CEAT102M25
C422	CEAT1R0M50

Mark	No.	Description	Part No.
	C418,C430,C441,C442,C447		CEAT221M10
	C408		CEAT2R2M50
	C448		CEATR47M50
	C400,C401,C434		CKSQYB102K50
	C415,C416,C449		CKSQYB103K50
	C409		CKSQYB122K50
	C435		CKSQYB123K50
	C417,C425,C426,C428		CKSQYB222K50
	C412,C427,C429		CKSQYB223K50
	C413,C424,C451,C452		CKSQYB273K50
	C402,C440		CKSQYF104Z50
	C405,C412,C420,C427		CKSQYF223Z50
	C431,C432,C437,C443,C445,C446		CKSQYF223Z50

**RESISTORS**

All Resistors

RS1/10S□□□J

**OTHERS**

X400	RESONATOR CSA16.93MHz	60266
424	CD PCB	66786
CN400	CONNECTOR 52043-1810	51014
CN406	CONNECTOR 53254-1210	51032
CN401-CN403	CONNECTOR S2B-PH-K-S	51033
CN407	CONNECTOR 53254-0310	51034
CN404	CONNECTOR 53254-0410	51035
CN405	CONNECTOR 53254-0610	51036

**CDE AMP COMBI PCB**
**SEMICONDUCTORS**

IC300 (BA5412)	52115
Q300,Q303,Q305,Q311	2SA933SR
Q301,Q304,Q310,Q312,Q314	2SC1740SR
Q302,Q309,Q313 (2SB1370F)	54610
Q315 (2SD2061F)	54624
D301,D305,D306,D314,D315	1SS133
D318	1SS133
D317	MTZJ10A
D302,D307	MTZJ5.1B
D310-D313	RL201

**CAPACITORS**

C312,C324,C328 (10μF/25V)	57212
C301,C320	CEAT101M10
C325	CEAT101M25
C305,C361,C362	CEAT102M25
C327,C351,C352	CEAT1R0M50
C310,C321	CEAT221M10
C308	CEAT221M25
C302,C311	CEAT2R2M50
C314	CEAT332M25
C303,C313,C357-C360	CEAT470M16
C306	CEAT4R7M50
C300,C315-C319,C322,C323	CKCYF103Z50
C353,C354	CKPUYB561K50
C329	CKPUYF104Z50
C355,C356	CQMB4104J50

**RESISTORS**

 R355,R356  
Other Resistors

 RD1/2PU331J  
RD1/8PU□□□J



# X-HMD01, X-HMD03, X-HX99, X-HX05

Mark	No.	Description	Part No.
<b>OTHERS</b>			
		FUSE HOLDER FH-V-0307	51606
J302		HEADPHONE JACK	52513
J303		1P PIN JACK YKB11-0940	52527
J301		PUSH TERMINAL 4P	60246
		AC TERMINAL	66745
		AMP COMBI PCB	66789
		AMP PCB	66789A
		FUSE PCB	66789B
		H/P PCB	66789C
CN303		CONNECTOR 53254-1210	51032
CN301		CONNECTOR 5268-12A	51040
CN305		CONNECTOR 5129-5A	51041
CN302		6P CONNECTOR ASSY	66768
CN306		3P CONNECTOR ASSY	66771
CN300		10P CONNECTOR ASSY	66777
		5P CONNECTOR	66767
CN304		CABLE HOLDER (5P)	51052-0500

## F FRONT CD PCB

### SEMICONDUCTORS

IC501 (CXP83232A)	52206
Q508,Q509,Q511,Q512	2SC2412K
Q507,Q510 (DTA114YKAT146)	54653
Q501,Q503,Q505	DTC114YK
D500-D505 (SLA380MT3F)	52907
D511 (SLR342MCTE7)	52908
D510 (SLR342DCTE7)	52909
D512 (SLR342VCTE7)	52910

### SWITCHES

SW500-SW518 (SOA-111HS)	53426
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### COILS

L501,L502 AXIAL INDUCTOR (10μH)	LAU100J
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### CAPACITORS

C504,C505 (30pF/50V)	56560
C527 (10μF/16V)	57213
C500-C503,C506-C526	CCSQSL101J50
C530,C534	CCSQSL560J50
C537	CEAT101M10
C528	CEAT471M10
C529,C532,C535,C536,C539,C543	CKSQYB102K50
C538,C540-C542,C546	CKSQYB103K50

### RESISTORS

All Resistors	RS1/10S□□□J
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### OTHERS

X501	RESONATOR CSTCS (4.19MHz)	50524
LCD500	LCD KSG4149(FTN)	52716
IC500	REMOTE CONTROL RECEIVER	60124
X500	CRYSTAL QRT-26 (32.76kHz)	60245
	LCD HOLDER	66727
	LCD SHEET	66756
	FRONT CD COMBI PCB	66788
	FRONT CD PCB	66788A
	LED PCB	66788B

Mark	No.	Description	Part No.
CN504		CONNECTOR 53253-0410	51029
CN500		CONNECTOR 53254-0210	51032
CN503		CONNECTOR ASSY (12P)	66764
CN501		CONNECTOR ASSY (12P)	66765
CN502		CONNECTOR ASSY (9P)	66766
CN505		4P CONNECTOR	66770
CN506		2P CONNECTOR	66772

## G HMD COMBI PCB ASSY

### SEMICONDUCTORS

IC800 (CXP84632-128Q)	52181
IC900 (NJU6408BFC1-01A)	52182
IC801 (AK4518-VF-E2)	52186
IC802,IC803	TC7SU04F-TE85L
Q803,Q805	2SA1037K
Q801,Q802,Q804,Q806,Q807	2SC2412K
Q881,Q882	2SC2412K
Q901,Q903,Q905	DTC114YK
D900-D905 (SLA380MT3F)	52907
D801	DA204K
D910	SLR342MCTC7
D802	DAN202K

### COILS AND FILTERS

L817,L818 INDUCTOR (LAN04KB4R7K)	52407
L803-L806,L820,L821	BK2125HM102
CHIP INDUCTOR	
L800-L802	LAU100J
L807,L814-L816,L819 (LAN02TA2R2)	52408
L822,L823 FERRITE BEADS	FBA04VA600AB

### SWITCHES

SW900-SW912 (SOA-111HS)	53426
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### CAPACITORS

C831,C833,C848 (10μF/16V)	57213
C811-C814,C816,C817,C820-C824	CCSQSL101J50
C825,C826,C850,C851	CCSQSL180J50
C837,C901	CEAT101M10
C846	CEAT1R0M50
C887	CCSQSL221J50
C836	CEAT2R2M50
C847	CEAT470M10
C818,C844	CEAT471M10
C827,C835,C839,C841,C845,C881	CEAT4R7M50
C882	CEAT4R7M50
C885	CKPUYF104Z50
C849	CEATR47M50
C853,C856,C858,C886	CKSQYB102K50
C819,C828,C834,C902	CKSQYB103K50
C829,C830,C832,C838,C840,C842	CKSQYF104Z50
C815,C852,C854,C855,C857,C903	CKSQYF104Z50

### RESISTORS

All Resistors	RS1/10S□□□J
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Mark	No.	Description	Part No.
<b>OTHERS</b>			
	X802	RESONATOR CSA12.0MTZ	50523
	CN902	10P CABLE HOLDER	51048-1000
	CN903	11P CABLE HOLDER	51048-1100
	CN807	1P PIN JACK YKB11-0940	52525
	LCD900	LCD KSG4148S(STN)	52715
	CN801	16P FFC CONNECTOR	VKN1192
	CN804	19P FFC CONNECTOR	VKN1195
	CN802	WIRE TRAP 10P	60237
	CN803	WIRE TRAP 11P	60239
	X801	CRYSTAL HC49US (22.5792MHz)	60240
		FERRITE BEAD FBA04	60241
		LCD HOLDER	66727
		LCD SHEET	66756
		11P FLAT CABLE	66773
		10P FLAT CABLE	66774
		MD COMBI PCB	66785
		FRONT MD PCB	66785A
		AD/DA PCB	66785B
		LED PCB	66785C
	CN901	CONNECTOR 53253-0410	51029
	CN805	12P CONNECTOR ASSY	66763
	CN900	4P CONNECTOR ASSY	66770
	CN806	10P CONNECTOR ASSY	66778

## I MD MOUNT (Reference Information)

### SEMICONDUCTORS

IC122	TC7S08F
IC123	TC7WU04F
IC101 (CXA2523AR)	8-752-080-95
IC121 (CXD2652AR)	8-752-384-47
IC202 LB1638MTE-L	8-759-099-79
IC125 (MSM51V4400-70TS-K)	8-759-334-38
IC192 (L88MS33T-TL)	8-759-426-95
IC152 (BH6511FS-E2)	8-759-430-28
IC171 (BR24C01AF-E2)	8-759-484-73
IC181 (TC74ACT540FT)	8-759-523-48
IC201 (RU8X12MF-0020)	8-759-524-58
Q101	DTA144EK
Q103	DTC114EK
Q102	2SA1037K
Q182 (2SK1764KY)	8-729-017-55
Q181 (2SJ278MYT)	8-729-018-76
Q162 (2SB798-T1)	8-729-103-85
IC103 (FMW1-T-14)	8-729-803-11
D181 (F1J6TP)	8-719-046-86
D101 (DAN202K-T-146)	8-719-914-47

### COIL

L101	FERRITE BEED INDUCTOR	1-414-235-21
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### CAPACITORS

C142	CCSQCH101J50
C106	CCSQCH102J50
C105	CKSQYB103K50
C117	CKSQYB104K25
C131	CKSQYB153K50

Mark	No.	Description	Part No.
	C116		CKSQYB223K50
	C115		CKSQYB224K16
	C189		CKSQYB333K25
	C112		CKSQYB472K50
	C158		CKSQYB682K50
	C111		CKSQYB683K25
	C107		CKSQYF104Z25

### RESISTORS

R SQA TYPE CHIP CONDUCTOR	1-216-295-91
R SQA TYPE CHIP RESISTOR (1Ω, 1/8W)	1-217-806-91
R163 METAL COATING RESISTOR (1Ω, 1/4W)	1-219-724-91
R213 CHIP NETWORK RESISTOR (10kΩ×4)	1-233-415-21
R120 CHIP NETWORK RESISTOR (100Ω×4)	1-233-575-21
R204 NETWORK RESISTOR (100kΩ×4)	1-233-810-21
R166 SQA TYPE CHIP RESISTOR (2.2Ω, 1/2W)	1-240-032-91
Other Resistors	RS1/10S□□□□

### OTHERS

CN101 FFC/FPC CONNECTOR 21P	1-691-385-21
CN106 FFC/FPC CONNECTOR 6P	1-768-338-21
CN103 FFC/FPC CONNECTOR 16P	1-770-425-11
CN110 CONNECTOR PIN 5P	1-774-731-21
CN104 FFC/FPC CONNECTOR 4P	1-778-289-11
CN102 FFC/FPC CONNECTOR 19P	1-778-460-11
CN105 FFC/FPC CONNECTOR 7P	1-779-345-11
X202 CERAMIC RESONATOR (32.768kHz)	1-760-174-41
X201 X" TAL RESONATOR (12MHz)	1-780-872-21

## L-SW PWB (Reference Information)

### OTHERS

FFC/FPC CONNECTOR 6P	1-768-338-21
PUSH SWITCH(1KEY)	1-771-082-21
PUSH LEVER SW(1KEY)	1-771-326-11

## D-SW PWB (Reference Information)

### OTHERS

2PIN PUSH SW(2KEY)	1-771-327-11
FFC/FPC CONNECTOR 7P	1-779-345-11

## 6. ADJUSTMENT

### 6.1 CD SECTION

Note : There is no information to be shown in this section.

### 6.2 MD SECTION

Note : There is no information to be shown in this section.

### 6.3 TUNER SECTION

#### 6.3.1 FM Tuner Section

- Set the mode selector to FM BAND.
- Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	FM SG (1kHz, $\pm 75$ kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (MHz)	Level (dB $\mu$ V)			
1	DET. waveform Coil Adjustment	98	60	98MHz	L7	<ul style="list-style-type: none"> <li>• Adjust L7 so that the voltage between TP8 (+) and TP9 (–) becomes <math>0V \pm 50mV</math>.</li> <li>• Check the waveform with the oscilloscope, and confirm so that the output level is about <math>-11 \pm 2dBV</math> and THD is about <math>0.5 \pm 0.1\%</math>. Confirm that the "TUNE" indicator in the LCD is turned on.</li> </ul>

#### 6.3.2 AM Tuner Section

- Set the mode selector to AM BAND.
- Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	AM SG (400Hz, 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (kHz)	Level (dB $\mu$ V/m)			
1	Vt (Tuning Voltage Adjustment)	530 1700	– –	530kHz 1700kHz	L2 –	<ul style="list-style-type: none"> <li>• Adjust L2 so that the voltage between TP6 (+) and TP7 (–) becomes 1.0V.</li> <li>• Set the reception frequency to 1700 kHz and confirm that the voltage is about 6.6V.</li> </ul>
2	IFT Adjustment	1000	S/N about 10dB	1000kHz	T1	<ol style="list-style-type: none"> <li>1. Connect an electrolytic capacitor of about 10<math>\mu</math>F to TP9 (TP9 side is +), and terminate with TP10 by a resistor of about 47k<math>\Omega</math>. Connect the sweep input to the both ends of terminated resistor.</li> <li>2. Adjust T1 so that the marker of 450kHz <math>\pm</math> 3kHz becomes the same level (single-peak characteristic of IF becomes symmetrical).</li> <li>3. Input 74dB<math>\mu</math>V from the SSG, confirm the waveform of output signal so that the output level is <math>-27V \pm 2dBV</math> and THD is about <math>1 \pm 0.5\%</math>. And confirm that the "TUNE" indicator in the LCD is turned on.</li> </ol>
3	Tracking Adjustment	600 1400	50 (S/N about 10dB)	600kHz 1400kHz	L1 TC1	Connect an oscilloscope to TP3 (L) and TP4 (R), and adjust L1 (600kHz) and TC1 (1400kHz) repeatedly so that the output level becomes maximum.

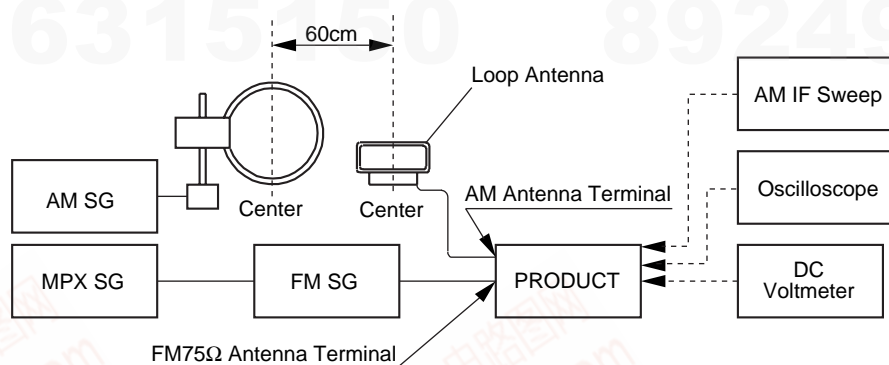


Fig.1 Adjustment Wiring Diagram

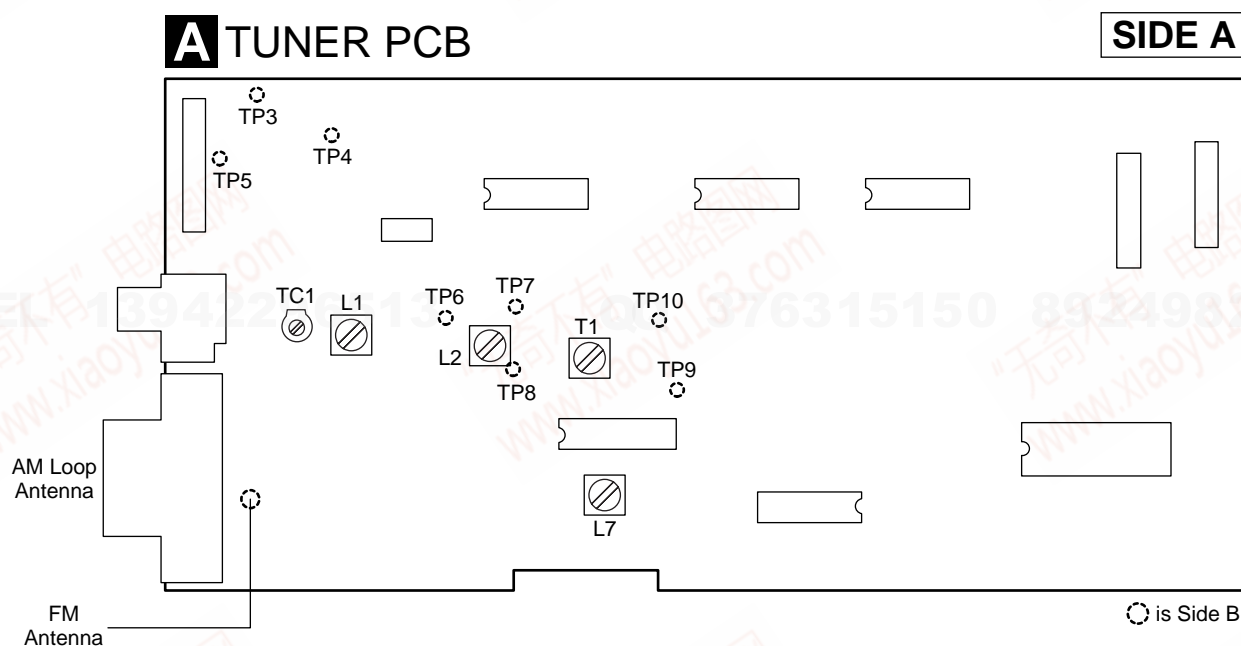


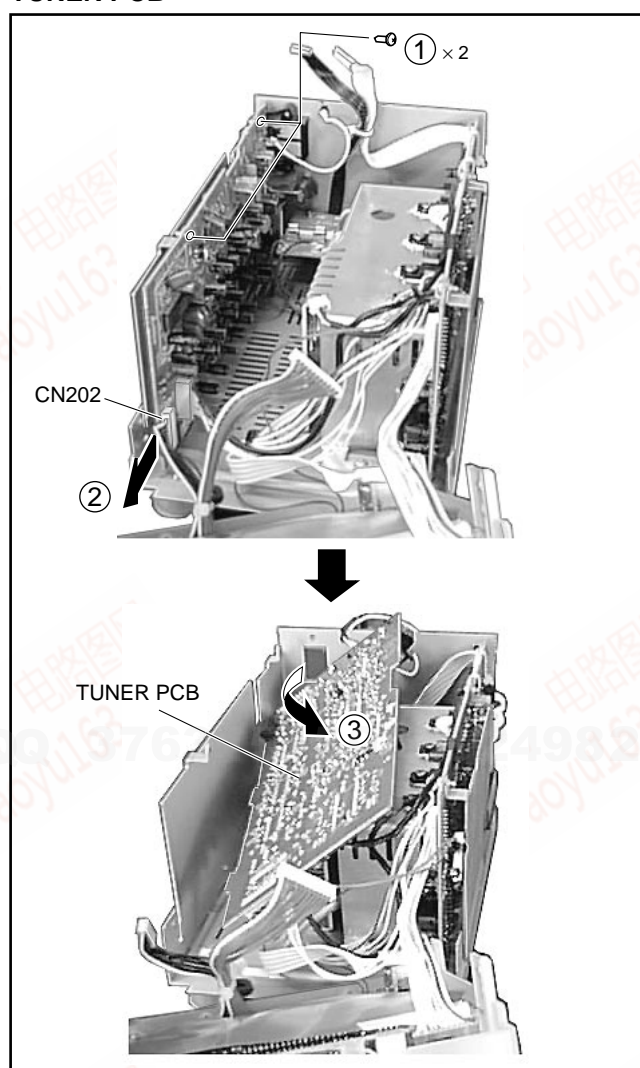
Fig.2 Adjustment Point



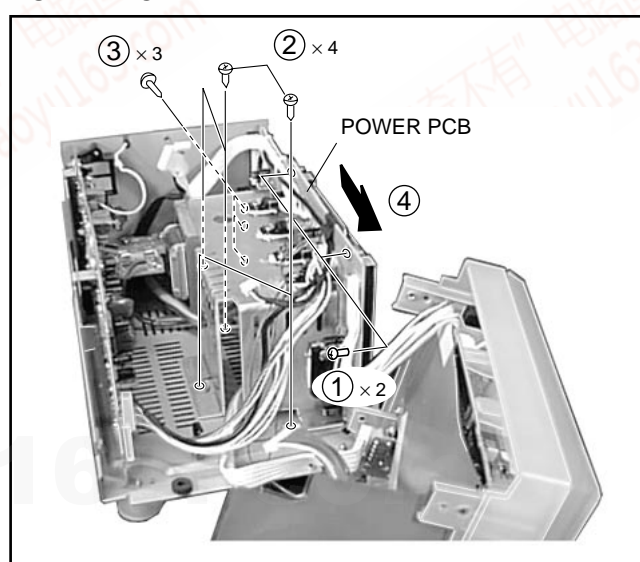
## 7.1 DISASSEMBLY

### 7.1.1 CD RECEIVER

## CD REAR CASE

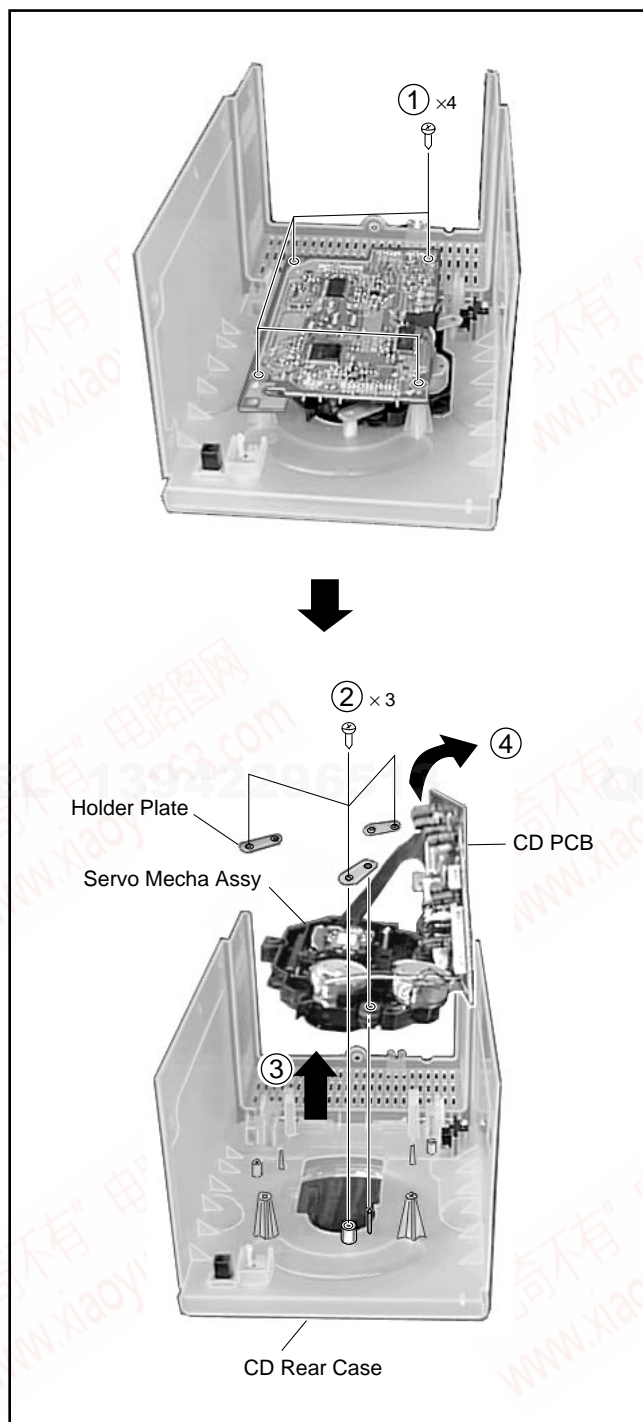


## POWER PCB



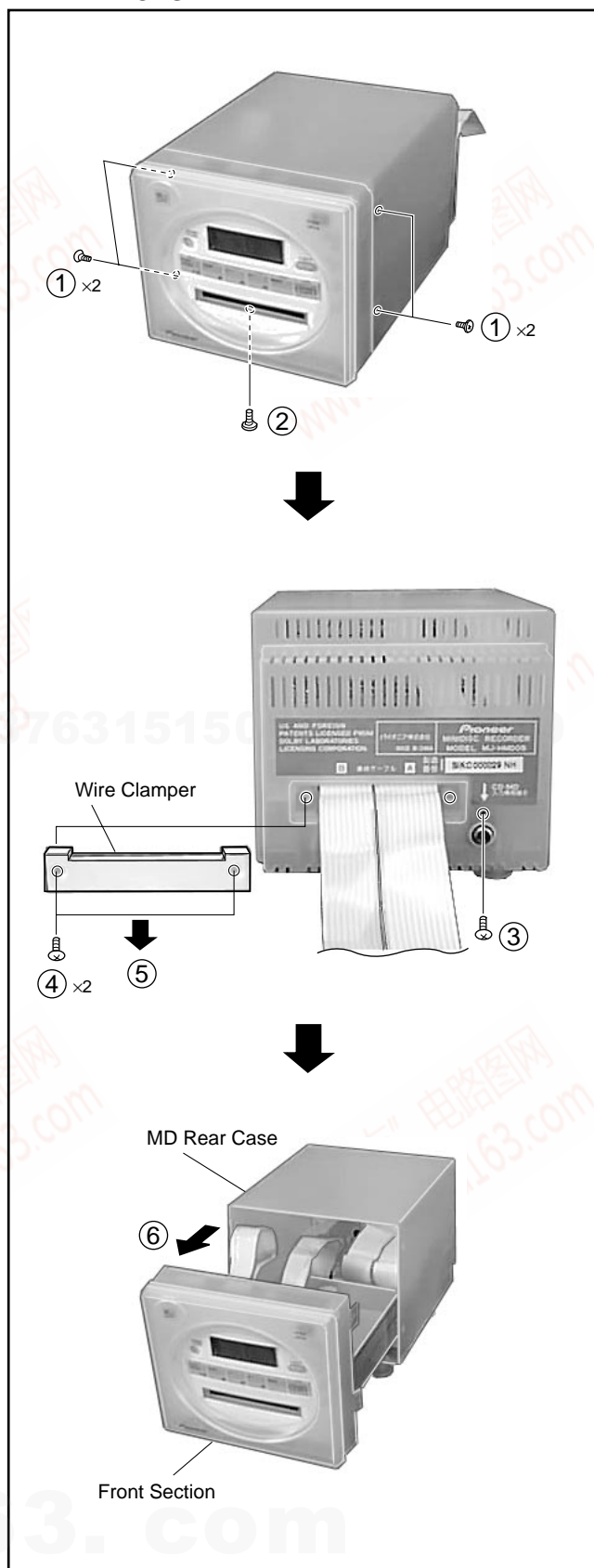


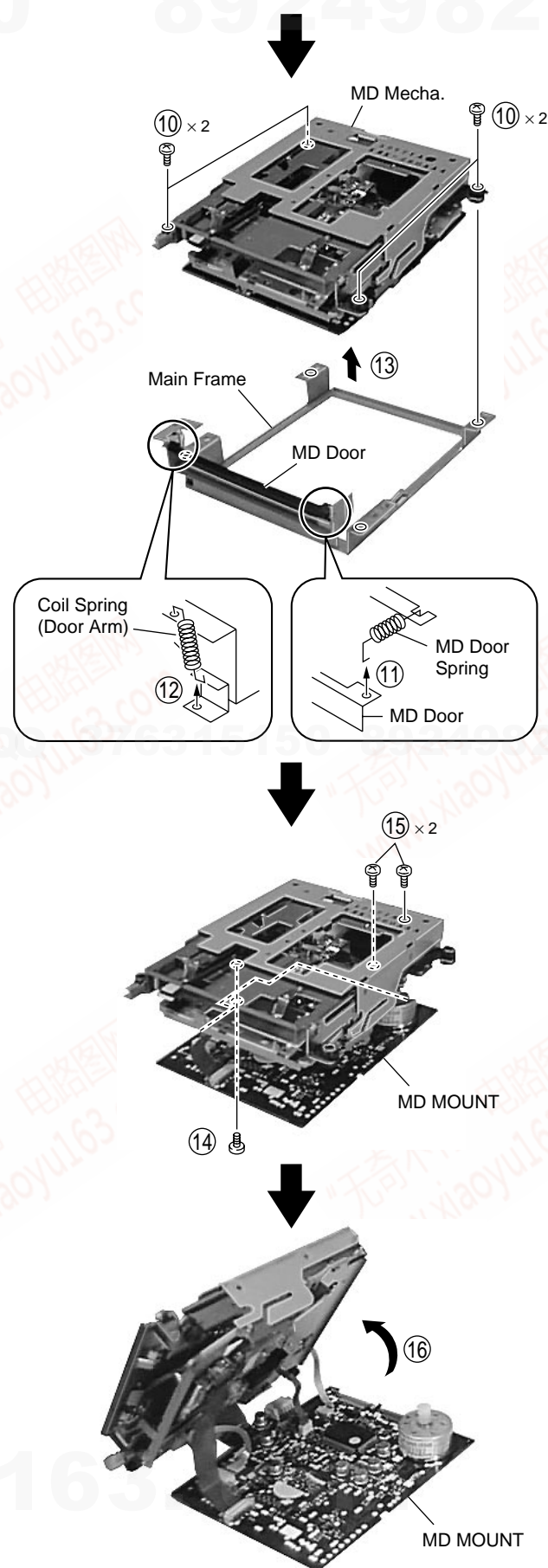
## CD MECHANISM ASSY



## 7.1.2 MD RECORDER

### MD REAR CASE





## 7.2 PARTS

### 7.2.1 IC

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

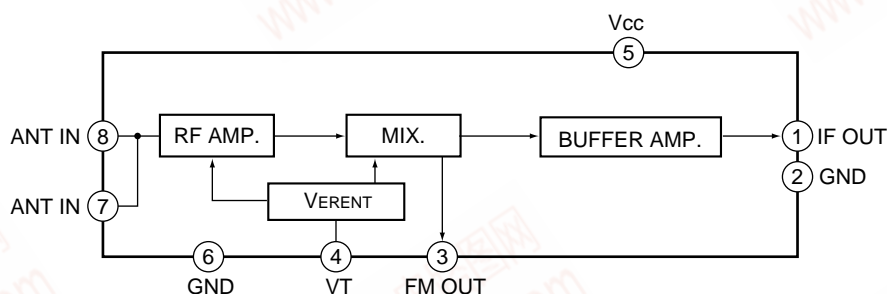
#### • List of IC

TFFJ2U, 52193 (BU2614), 52192 (BH3854AS), 52103 (AN8806SB), 52118 (BA6299FP), 52187 (MN662741RHM), 52194 (CXP83124A), 52186 (AK4518-VF-E2)

### ■ TFFJ2U (TUNER PCB : U1)

#### • FM Front End

#### • Block Diagram

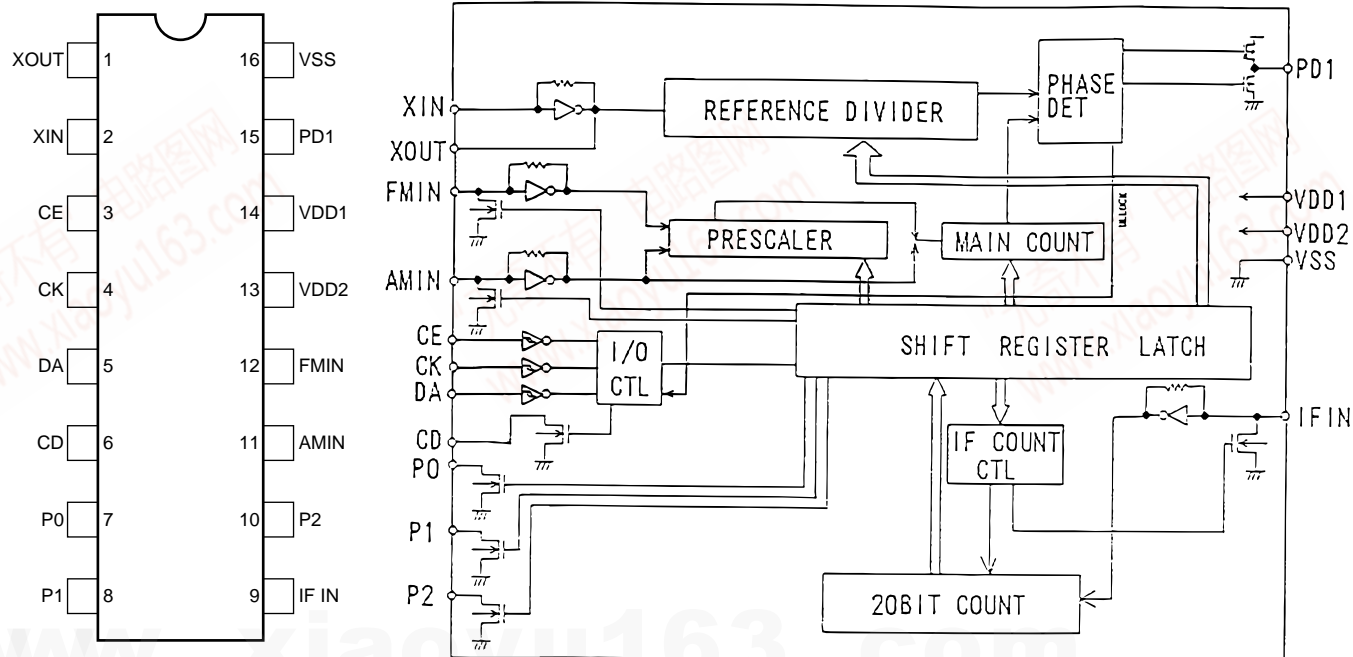


### ■ 52193 (BU2614) (TUNER PCB : IC3)

#### • PLL IC

#### • Pin Arrangement (Top view)

#### • Block Diagram

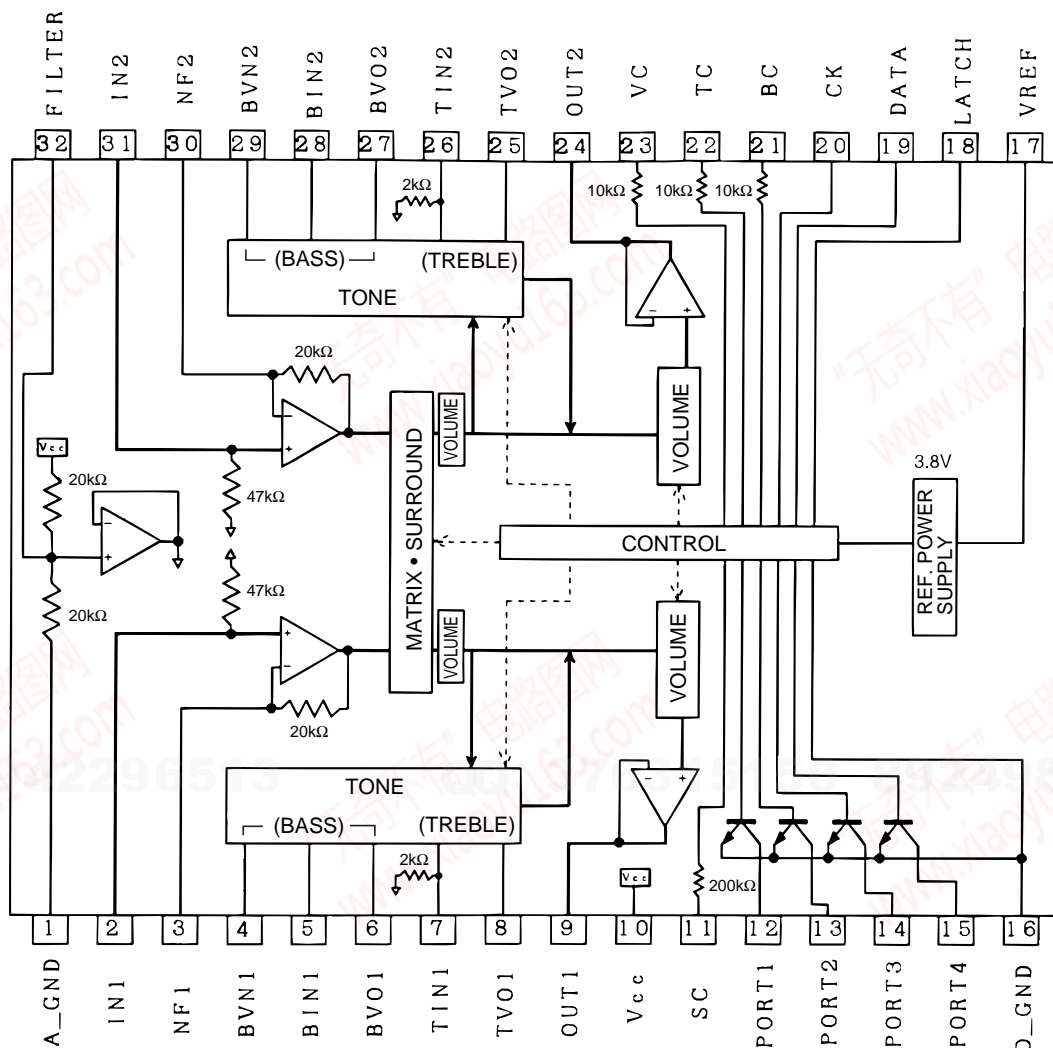


# X-HMD01, X-HMD03, X-HX99, X-HX05

## 52192 (BH3854AS) (TUNER PCB : IC102)

• Main Control and TONE Control IC

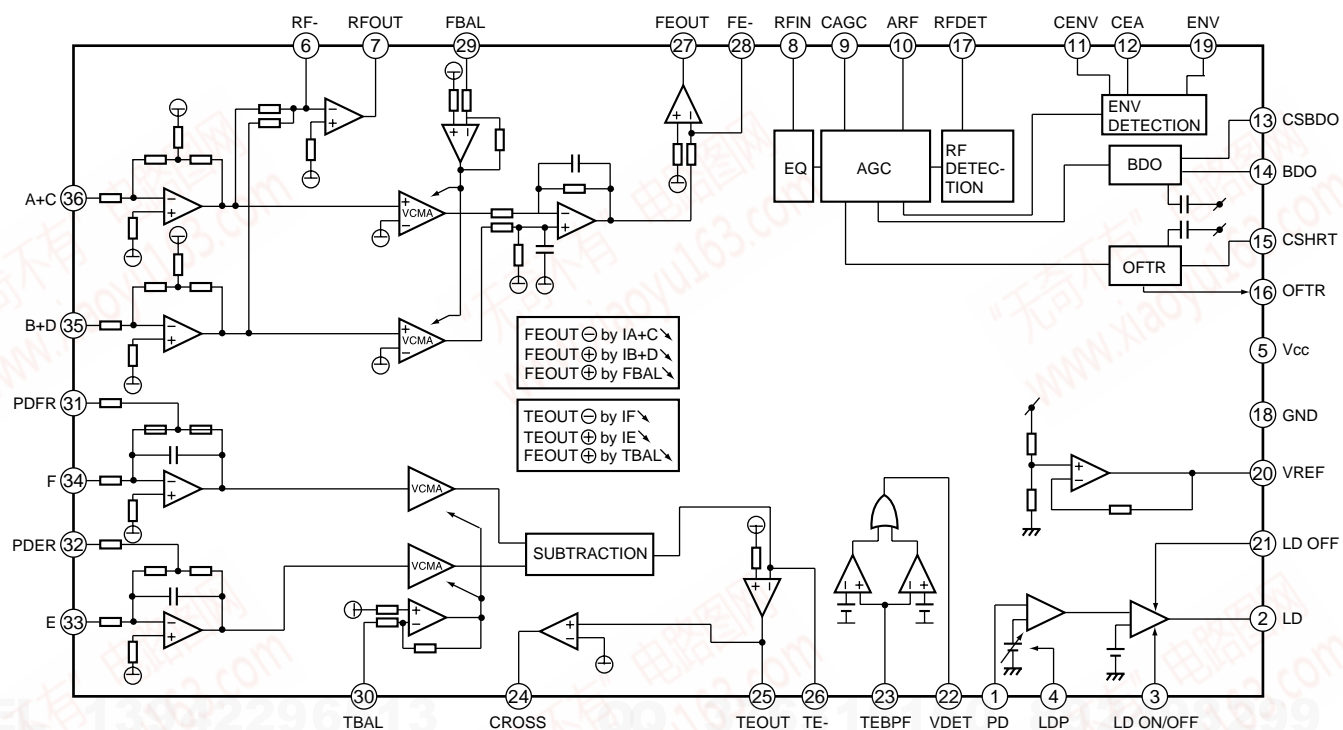
### • Block Diagram



### • Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	A_GND	Analog ground	17	VREF	3.8V reference voltage output pin
2	IN1	1 ch volume input pin	18	LATCH	Latch data reception pin
3	NF1	Gain adjustment pin of input stage amp.	19	DATA	Data reception pin
4	BVN1	Pins for 1 ch low-pass filter connection	20	CK	Clock reception pin
5	BIN1		21	BC	Time constant install pins for change shock protection
6	BVO1		22	TC	
7	TIN1	Pins for 1 ch high-pass filter connection	23	VC	2 ch volume output pin
8	TVO1		24	OUT2	
9	OUT1	1 ch volume output pin	25	TVO2	2 ch high-pass filter connection pins
10	Vcc	Power supply pin	26	TIN2	2 ch low-pass filter connection pins
11	SC	Time constant install pin for change shock	27	BVO2	
12	PORT1	Port output pins	28	BIN2	
13	PORT2		29	BVN2	Gain adjustment pin of input stage amp.
14	PORT3		30	NF2	
15	PORT4		31	IN2	2 ch volume input pin
16	D_GND	Digital ground	32	FILTER	Filter pin



**52103 (AN8806SB) (CD PCB : IC400)**
**• Digital Servo Head Amplifier IC**
**• Block Diagram**

**• Pin Function**

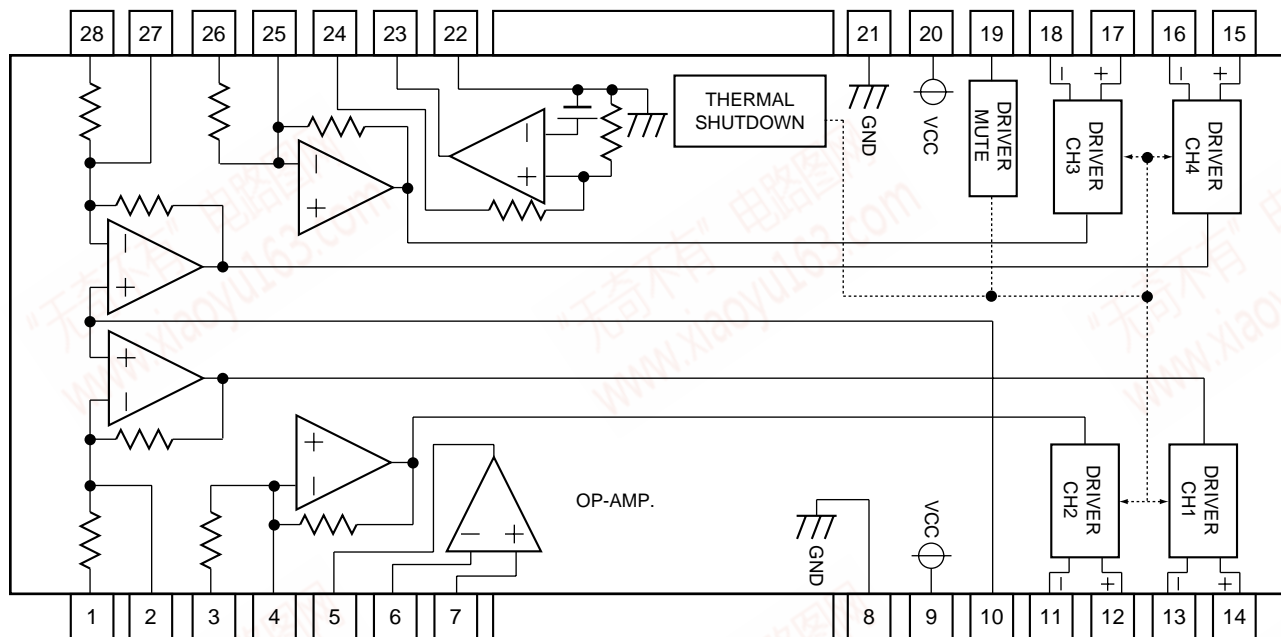
No.	Pin Name	Function	No.	Pin Name	Function
1	PD	APC Amp input	19	ENV	3TENV output
2	LD	APC Amp output	20	VREF	VREF output
3	LD ON/OFF	APC ON/OFF control	21	LD OFF	APC OFF control
4	LDP	APC reference voltage setting	22	VDET	VDET output
5	Vcc	Power supply pin	23	TEBPF	VDET input
6	RF-	RF Amp inverting input	24	CROSS	CROSS output
7	RFOUT	RF Amp output	25	TEOUT	TE. Amp output
8	RFIN	AGC input	26	TE-	TE. Amp inverting input
9	CAGC	AGC loop filter connection pin	27	FEOUT	FE. Amp output
10	ARF	AGC output	28	FE-	FE. Amp inverting input
11	CENV	Capacitor connection pin for RF detection	29	FBAL	F. BAL control
12	CEA	Capacitor connection pin for HPF-Amp	30	TBAL	T. BAL control
13	CSBDO	Capacitor connection pin for RF dark side envelope	31	PDFR	I-V Amp conversion resistor adjustment
14	BDO	BDO output	32	PDER	
15	CSHRT	Capacitor connection pin for RF light side envelope	33	E	
16	OFTR	OFTR output	34	F	
17	RFDET	RFDET output	35	B+D	I-V Amp input
18	GND	Ground	36	A+C	



**X-HMD01, X-HMD03, X-HX99, X-HX05****52118 (BA6299FP) (CD PCB : IC401)**

• CD Driver IC

## • Block Diagram



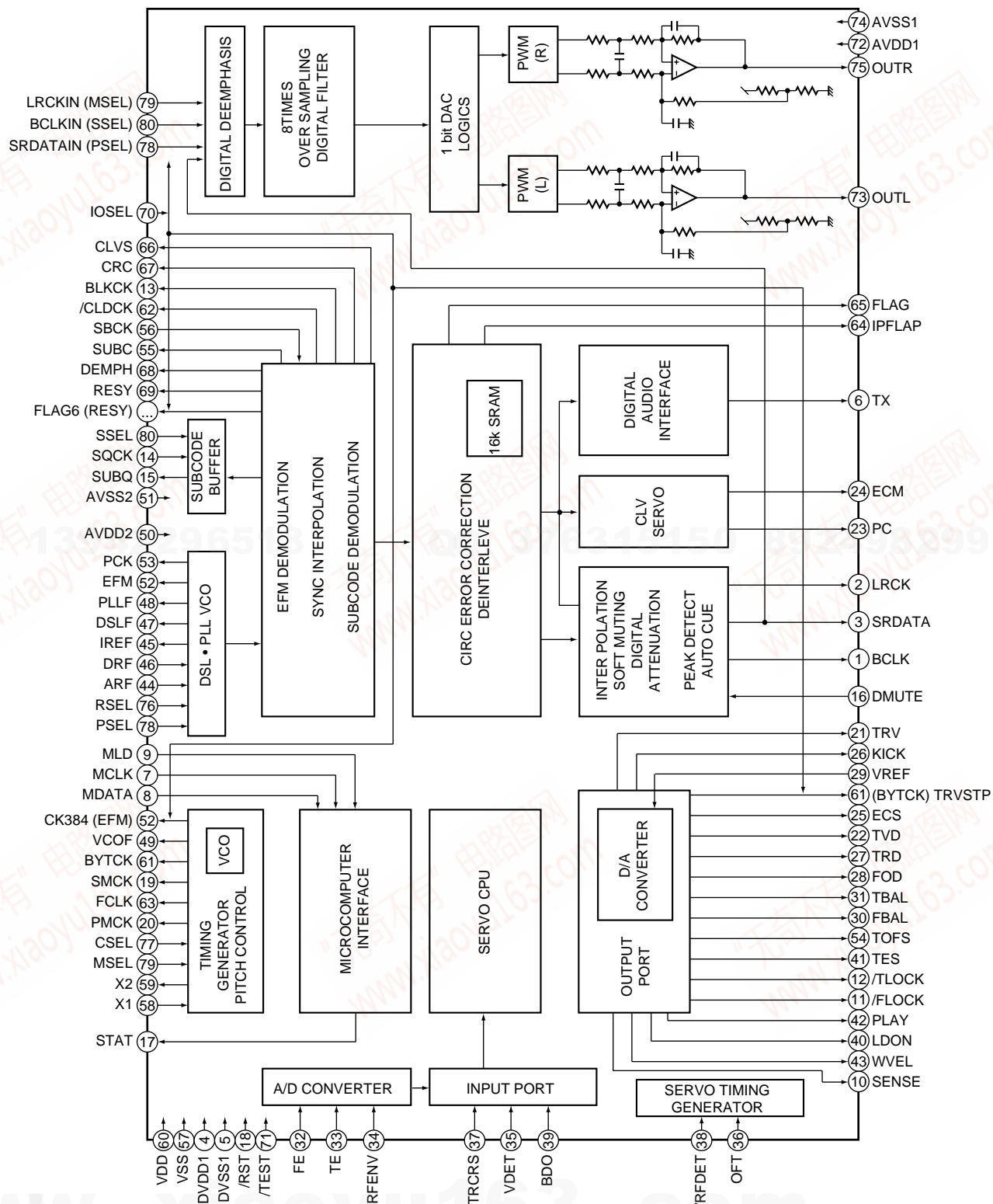
## • Pin Function

No.	Pin Name	Function	No.	Pin Name	Function
1	VIN1	CH1 input	15	VO4 +	CH4 positive output
2	VIN1'	CH1 gain change	16	VO4 -	CH4 negative output
3	VIN2	CH2 input	17	VO3 +	CH3 positive output
4	VIN2'	CH2 gain change	18	VO3 -	CH3 negative output
5	OPOUT	OP Amp output	19	MUTE	Mute control
6	OPIN -	OP Amp negative input	20	VCC	VCC
7	OPIN +	OP Amp positive input	21	GND	Sub-straight GND
8	GND	Sub-straight GND	22	RGND	GND (regulator GND)
9	VCC	VCC	23	REGB	External TR base connection pin
10	BIAS	Bias input	24	REGOUT	5V output (connect a external PNP Tr collector)
11	VO2 -	CH2 negative output	25	VIN3'	CH3 gain change
12	VO2 +	CH2 positive output	26	VIN3	CH3 input
13	VO1 -	CH1 negative output	27	VIN4'	CH4 gain change
14	VO1 +	CH1 positive output	28	VIN4	CH4 input

**■ 52187 (MN662741RHM) (CD PCB : IC402)**

• DSP IC

● Block Diagram



# X-HMD01, X-HMD03, X-HX99, X-HX05

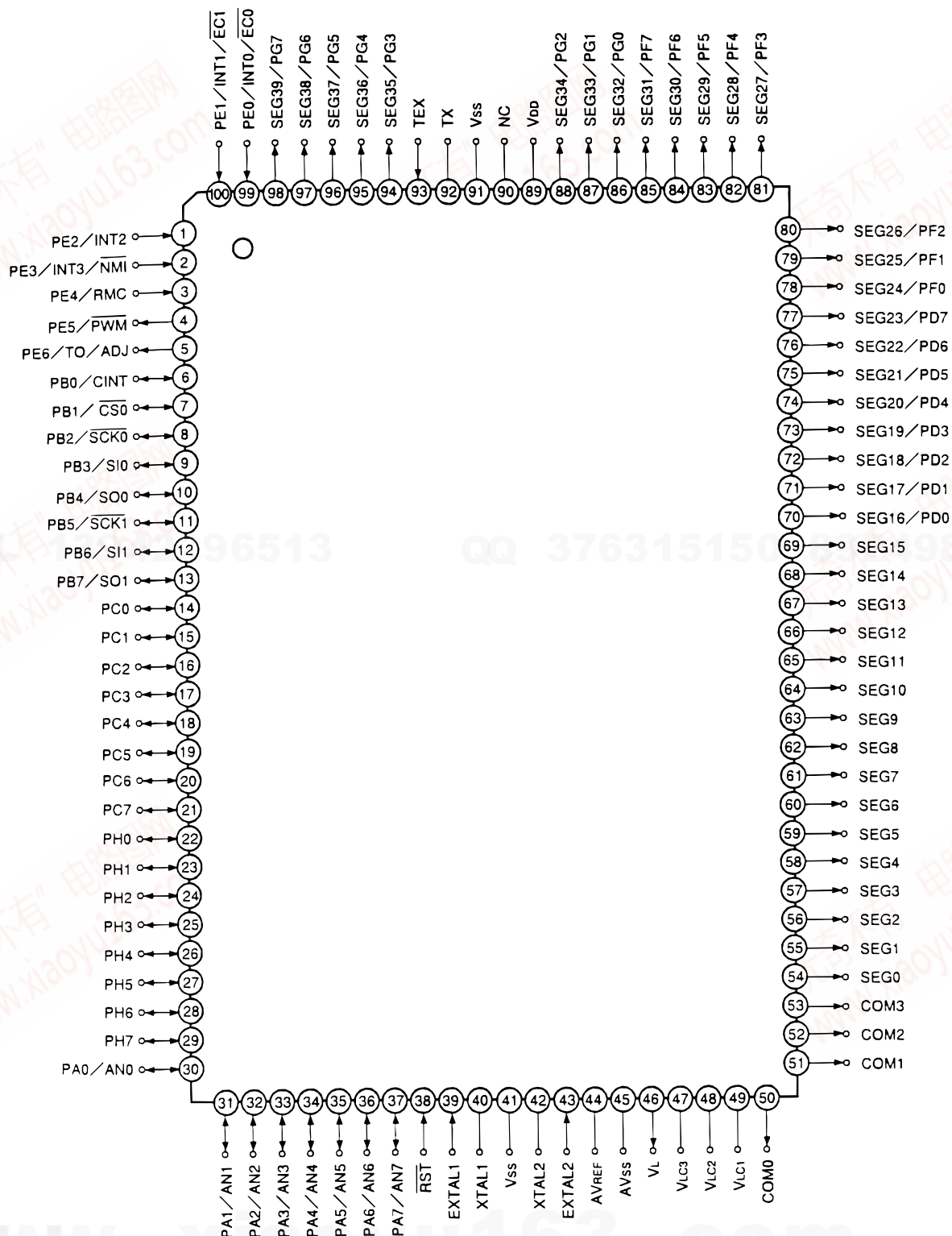
## ● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	BCLK	O	Bit clock output for SRDATA	31	TBAL	O	Tracking balance adjustment output
2	LRCK	O	L, R discrimination signal output H: Lch audio data, L: Rch audio data	32	FE	I	Focus error signal input (analog input)
3	SRDATA	O	Serial data output	33	TE	I	Tracking error signal input (analog input)
4	DVDD1	I	Power supply for digital circuit	34	RFENV	I	RF envelope signal input (analog input)
5	DVSS1	I	Ground for digital circuit	35	VDET	I	Vibration detection signal input (H: detection)
6	TX	O	Digital audio interface output signal	36	OFT	I	Off track signal input (H: Off track)
7	MCLK	I	Microcomputer command clock signal input (Data latches at rising edge.)	37	TRCRS	I	Track cross signal input
8	MDATA	I	Microcomputer command data input	38	/RFDET	I	RF detection signal input (L: detection)
9	MLD	I	Microcomputer command load signal input L:	39	BDO	I	Drop out signal input (H: drop out)
10	SENSE	O	Sense signal output (OFT, FESL, NACEND, NAJEND, SFG, NWTEND)	40	LDON	O	Laser ON signal output (H: ON)
11	/FLOCK	O	Focus servo incoming signal (L: incoming)	41	TES	O	Tracking error shunt signal output (H: shunt)
12	/TLOCK	O	Tracking servo incoming signal (L: incoming)	42	PLAY	O	Play signal output (H: PLAY)
13	BLKCK	O	Subcode block clock signal (fBLKCK=75Hz)	43	WVEL	O	Double speed status signal output
14	SQCK	I	External clock input for subcode Q register	44	ARF	I	RF signal input
15	SUBQ	O	Subcode Q data output	45	IREF	I	Reference current input
16	DMUTE	I	Muting output H: Mute	46	DRF	I	Bias pin for DSL
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK, FLAG6, SENSE, /FLOCK, /TLOCK)	47	DSLIF	I/O	Loop filter pin for DSL
18	/RST	I	Reset input (Reset at IOSEL=L and more than 472ns) L: Reset	48	PLLIF	I/O	Loop filter pin for PLL
19	SMCK	O	When MSEL=H, 8.4672MHz clock signal output	49	VCOF	I/O	Loop filter pin for VCO
20	PMCK	O	88.2kHz clock signal output	50	AVDD2	I	Power supply for analog circuit (for DSL, PLL, AD input and DA output)
21	TRV	O	Traverse forced forward output	51	AVSS2	I	GND for analog circuit (for DSL, PLL, AD input and DA output)
22	TVD	O	Traverse drive output	52	EFM	O	EFM signal output When IOSEL=H, EFM signal output. When IOSEL=L,
23	PC	O	Spindle motor ON signal L: ON	53	PCK	O	PLL extract clock output (fPCK=4.32MHz)
24	ECM	O	Spindle motor drive signal (forced mode output) 3-state	54	TOFS	O	Tracking offset adjustment output
25	ECS	O	Spindle motor drive signal (servo error signal output)	55	SUBC	O	Subcode serial output
26	KICK	O	Kick pulse output 3-state	56	SBCK	I	Clock input for subcode serial output (with pull-up resistor)
27	TRD	O	Tracking drive output	57	VSS	I	GND for oscillation circuit
28	FOD	O	Focus drive output	58	X1	I	Crystal oscillation circuit input (f=16.9344MHz, 33.8688MHz)
29	VREF	I	Reference voltage for DA output section (TVD, ECS, TRD, FOD, FBAL, TBAL, TOFS)	59	X2	O	Crystal oscillation circuit output (f=16.9344MHz, 33.8688MHz)
30	FBAL	O	Focus balance adjustment output	60	VDD	I	Power supply for oscillation circuit

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
61	BYTCK	O	When IOSEL=H, byte clock signal output When IOSEL=L, Traverse STOP signal output H: STOP mode	71	/TEST	I	Test pin (Normal: H)
62	/CLDCK	O	Subcode frame clock signal output (fCLDCK=7.35kHz)	72	AVDD1	I	Power supply for analog circuit [for audio output (use both as L ch and R ch)]
63	FCLK	O	Crustal frame clock signal output (fFCLK=7.35kHz)	73	OUTL	O	L ch audio output
64	IPFLAG	O	Interpolate flag signal output H: Interpolate	74	AVSS1	I	Ground for analog circuit [for audio output (use both as L ch and R ch)]
65	FLAG	O	Flag signal output	75	OUTR	O	R ch audio output
66	CLVS	O	Phase sync. state signal output of spindle servo H: CLV, L: Rough servo	76	RSEL	I	RF signal polarity specify pin When light level is "H", RSEL=H When light level is "L", RSEL=L
67	CRC	O	Subcode CRC check result output H: OK, L: NG	77	CSEL	I	Crystal oscillator frequency specify pin H: Oscillation frequency = 33.8688MHz L: Oscillation frequency = 16.9344MHz
68	DEMPH	O	Deemphasis detection signal output H: ON	78	PSEL	I	When IOSEL=H, test pin (normal: L) When IOSEL=L, SRDATA input
69	RESY	O	When IOSEL=H, playback sync signal RESY output of frame sync. H: synchronize, L: not synchronize When IOSEL=L, address reset signal FLAG6 output of RAM for deinterleave. L: generate address reset	79	MSEL	I	When IOSEL=H, SMCK pin output frequency switch H: SMCK= 8.4672MHz L: SMCK= 4.2336MHz When IOSEL=L, LRCK input H: Lch data, L: Rch data SMCK= 4.2336MHz fixed
70	IOSEL	I	Mode switch pin	80	SSEL	I	When IOSEL=H, SUBQpin output mode switch H: Q code buffer use mode When IOSEL=L, BCLK input Q code buffer mode fixed

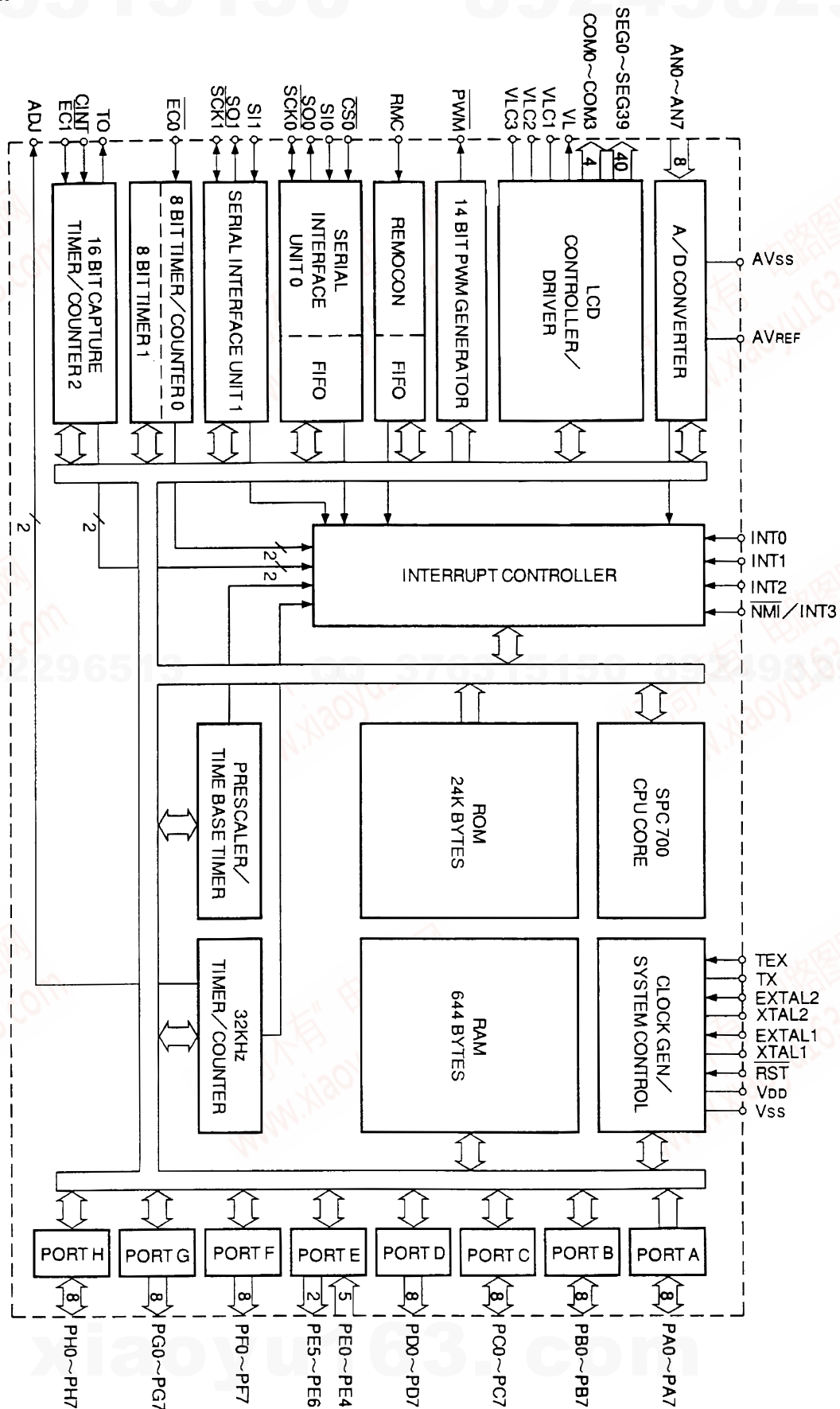
- **System Microcomputer IC**

- **Pin Arrangement (Top view)**





● Block Diagram



# X-HMD01, X-HMD03, X-HX99, X-HX05

## ● Pin Function

No.	Pin Name	I/O	Function
1	PE2/INT2	I	Port (E) / External interrupt request input
2	PE3/INT3/NMI	I	Port (E) / External interrupt request input / Nonmaskable interrupt input
3	PE4/RMC	I	Port (E) / Remote control reception circuit input
4	PE5/PWM	O	Port (E) / 14 bit PWM output
5	PE6/TO/ADJ	O	Port (E) / 16 bit timer/Rectangle waveform output of counter (duty 50% output) /32 kHz oscillation frequency
6	PB0/CINT	I/O	8 bit input/output port (port B) / 16 bit timer / External capture input of counter
7	PB1/CS0	I/O	8 bit input/output port (port B) / Chip select input of serial interface (CH0)
8	PB2/SCK0	I/O	8 bit input/output port (port B) / serial interface (CH0) input/output
9	PB3/SI0	I/O	8 bit input/output port (port B) / serial data (CH0) input
10	PB4/SO0	I/O	8 bit input/output port (port B) / serial data (CH0) output
11	PB5/SCK1	I/O	8 bit input/output port (port B) / serial clock (CH1) input/output
12	PB6/SI1	I/O	8 bit input/output port (port B) / serial data (CH1) input
13	PB7/SO1	I/O	8 bit input/output port (port B) / serial data (CH1) output
14	PC0	I/O	8 bit input/output port (port C)
15	PC1		
16	PC2		
17	PC3		
18	PC4		
19	PC5		
20	PC6		
21	PC7		
22	PH0	I/O	8 bit input/output port (port H)
23	PH1		
24	PH2		
25	PH3		
26	PH4		
27	PH5		
28	PH6		
29	PH7		
30	PA0/AN0	I/O	8 bit input/output port (port A) / Analog input to A/D converter
31	PA1/AN1		
32	PA2/AN2		
33	PA3/AN3		
34	PA4/AN4		
35	PA5/AN5		
36	PA6/AN6		
37	PA7/AN7		
38	RST	I	System reset of "L" level active
39	EXTAL1	I	Crystal connection pin for system clock oscillation When apply a clock from the external, input to EXTAL1 pin and input the reverse clock to XTAL1 pin.System clock oscillation use for normal operation mode (Max. 10MHz).
40	XTAL1	–	
41	VSS	–	GND pin
42	XTAL2	–	Crystal connection pin for system clock oscillation When apply a clock from the external, input to EXTAL2 pin and input the reverse clock to XTAL2 pin.System clock oscillation use for sub-clock mode (Typ. 500kHz).
43	EXTAL2	I	
44	AVREF	–	Reference voltage input of A/D converter
45	AVSS	–	GND pin of A/D converter
46	VL	O	Control pin for cutoff the current which flows to the bias resistor for external LCD at standby.
47	VLC3	–	Bias power supply pin for LCD
48	VLC2	–	
49	VLC1	–	
50	COM0	O	Common signal output pin for LCD

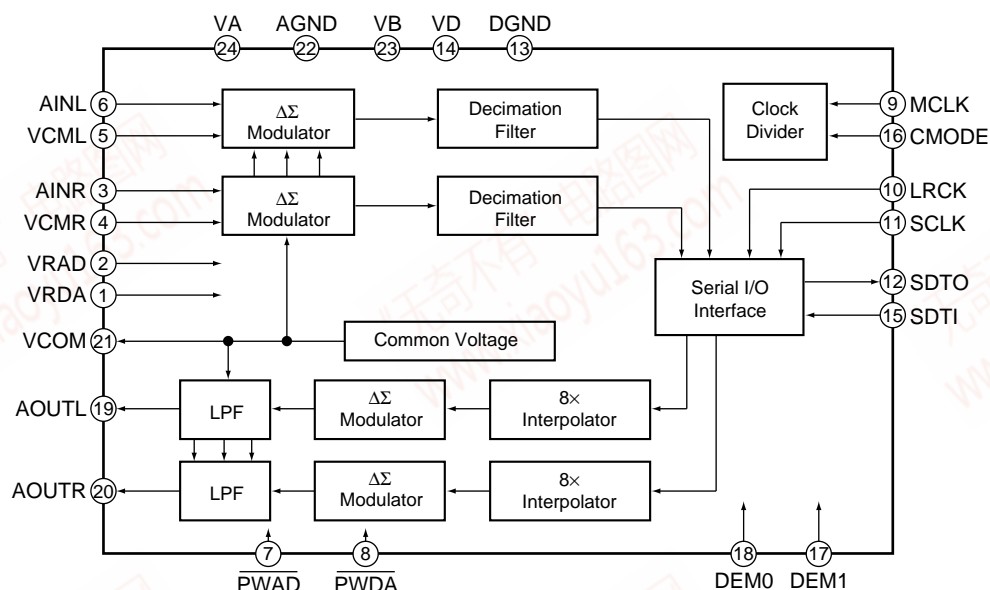
No.	Pin Name	I/O	Function
51	COM1	O	Common signal output for LCD
52	COM2		
53	COM3		
54	SEG0	O	Segment signal output for LCD
55	SEG1		
56	SEG2		
57	SEG3		
58	SEG4		
59	SEG5		
60	SEG6		
61	SEG7		
62	SEG8		
63	SEG9		
64	SEG10		
65	SEG11		
66	SEG12		
67	SEG13		
68	SEG14		
69	SEG15		
70	SEG16/PD0	O	8 bit output port (port D) / Segment signal output for LCD
71	SEG17/PD1		
72	SEG18/PD2		
73	SEG19/PD3		
74	SEG20/PD4		
75	SEG21/PD5		
76	SEG22/PD6		
77	SEG23/PD7		
78	SEG24/PF0	O	8 bit output port (port F) / Segment signal output for LCD
79	SEG25/PF1		
80	SEG26/PF2		
81	SEG27/PF3		
82	SEG28/PF4		
83	SEG29/PF5		
84	SEG30/PF6		
85	SEG31/PF7		
86	SEG32/PG0	O	8 bit output port (port G) / Segment signal output for LCD
87	SEG33/PG1		
88	SEG34/PG2		
89	VDD	–	Positive power supply pin
90	NC	–	NC pin Connect to VDD at normal operation.
91	VSS	–	GND pin
92	TX	O	Crystal connection pin of the clock generating circuit for 32kHz timer counter Connect a 32.768kHz crystal between TEX and TX. When using for event input, connect the source of clock generation to TEX and TX pin set to open.
93	TEX	I	
94	SEG35/PG3	O	8 bit output port (port G) / Segment signal output for LCD
95	SEG36/PG4		
96	SEG37/PG5		
97	SEG38/PG6		
98	SEG39/PG7		
99	PE0/INT0/EC0	I	(Port E) / External interrupt request input / Timer / External event input of the timer
100	PE1/INT1/EC1		

# X-HMD01, X-HMD03, X-HX99, X-HX05

## 52186 (AK4518-VF-E2) (AD/DA PCB : IC801)

• AD/DA Converter IC

### • Block Diagram



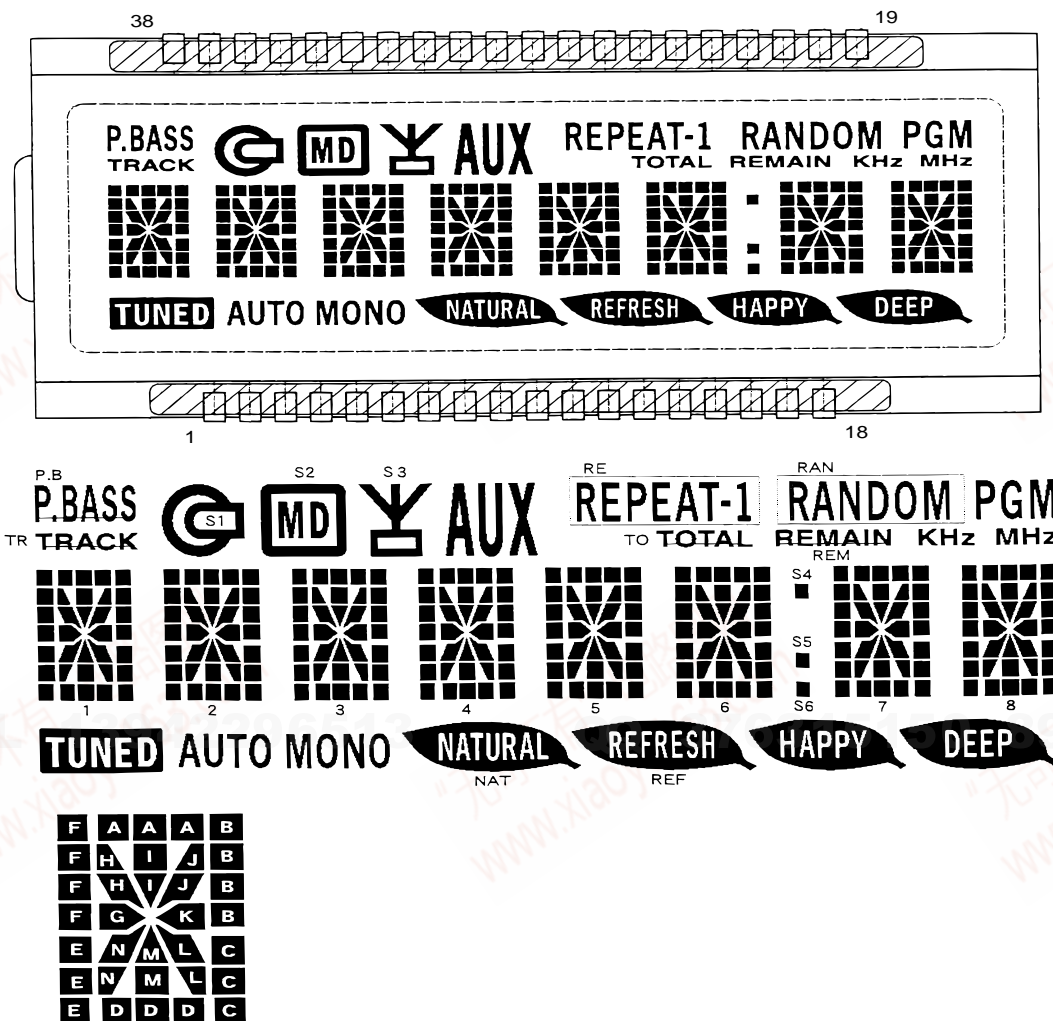
### • Pin Function

No.	Pin Name	I/O	Function
1	VRDA	I	Reference voltage input for DAC and VA
2	VRAD	I	Reference voltage input for ADC and VA
3	AINR	I	R ch analog input
4	VCMR	O	R ch common voltage output , $0.45 \times VA$ Connect an electrolytic capacitor (about 4.7 $\mu$ F) and a ceramic capacitor (0.1 $\mu$ F) between this pin and AGND.
5	VCML	O	L ch common voltage output , $0.45 \times VA$ Connect an electrolytic capacitor (about 4.7 $\mu$ F) and a ceramic capacitor (0.1 $\mu$ F) between this pin and AGND.
6	AINL	I	L ch analog input
7	PWAD	I	ADC power down mode L: power down
8	PWDA	I	DAC power down mode L: power down
9	MCLK	I	Master clock input
10	LRCK	I	Input/output channel clock pin
11	SCLK	I	Audio serial data clock pin
12	SDTO	O	Audio serial data output
13	DGND	–	Digital ground
14	VD	–	Digital power supply
15	SDTI	I	Audio serial data input
16	CMODE	I	Master clock selection "H": 384fs or 512fs, "L": 256fs
17	DEM1	I	Deemphasis frequency selection
18	DEM0		
19	AOUTL	O	L ch analog output
20	AOUTR	O	R ch analog output
21	VCOM	O	Common voltage output , $0.45 \times VA$ Connect an electrolytic capacitor (about 4.7 $\mu$ F) and a ceramic capacitor (0.1 $\mu$ F) between this pin and AGND.
22	AGND	–	Analog ground pin
23	VB	–	Substraight pin
24	VA	–	Analog power supply

## 7.2.2 DISPLAY

■ 52716 (KSG4149) (FRONT CD PCB : LCD500)

• LCD



• Pin Connection

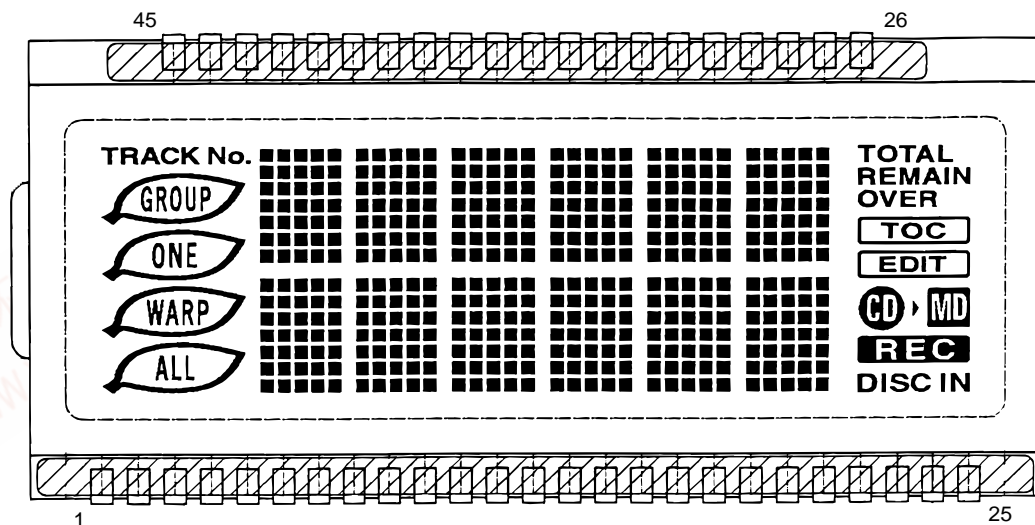
NO	COM1	COM2	COM3	COM4	NO	COM1	COM2	COM3	COM4
1	1M	1N	1G	1H	21	7L	7K	7J	7I
2	TUNED	1C	1B	1A	22	7D	7E	7F	RE
3	2M	2N	2G	2H	23	6L	6K	6J	6I
4	AUTO	2C	2B	2A	24	6D	6E	6F	AUX
5	3M	3N	3G	3H	25	5L	5K	5J	5I
6	MONO	3C	3B	3A	26	5D	5E	5F	S3
7	4M	4N	4C	4H	27	4L	4K	4J	4I
8	NAT	4C	4B	4A	28	4D	4E	4F	S2
9	5M	5N	5G	5H	29	3L	3K	3J	3I
10	REF	5C	5B	5A	30	3D	3E	3F	S1
11	6M	6N	6G	6H	31	2L	2K	2J	2I
12	HAPPY	6C	6B	6A	32	2D	2E	2F	P.B
13	S6	S5	S4	TO	33	1L	1K	1J	1I
14	7M	7N	7G	7H	34	1L	1L	1L	1L
15	DEEP	7C	7B	7A	35	—	—	—	COM4
16	8D	8E	8F	REM	36	—	—	COM3	—
17	8M	8N	8G	8H	37	—	COM2	—	—
18	PGM	8C	8B	8A	38	COM1	—	—	—
19	RAN	—	MHz	KHz					
20	8L	8K	8J	8I					



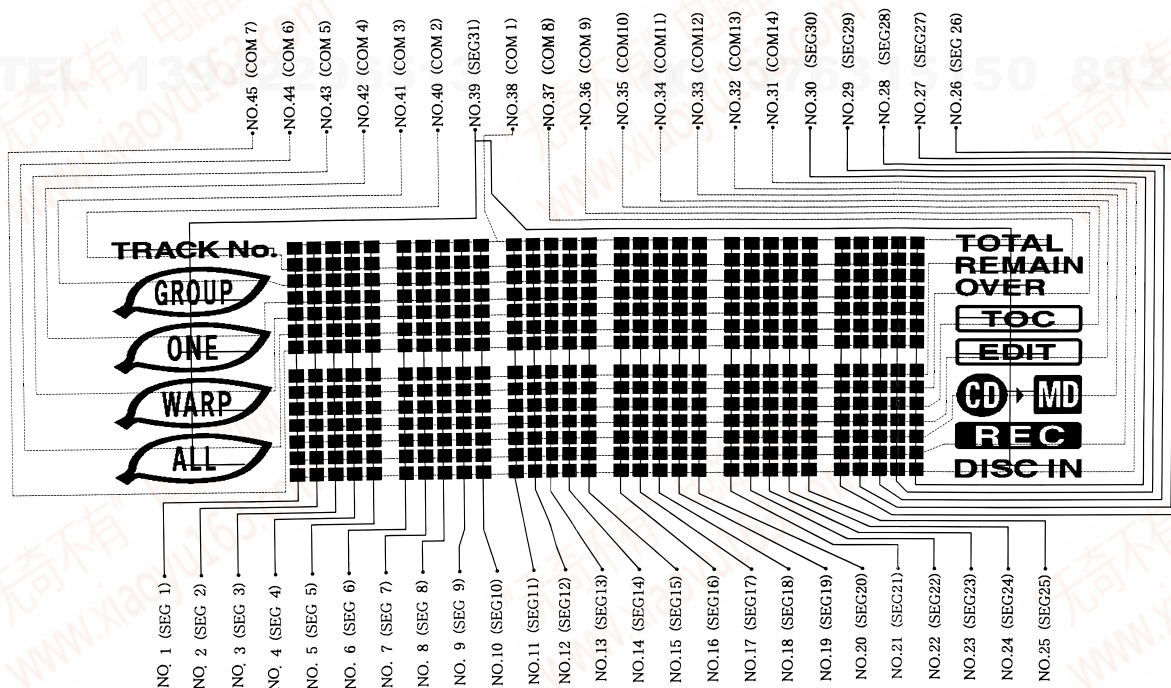
# X-HMD01, X-HMD03, X-HX99, X-HX05

## 52715 (KSG4148) (FRONT MD PCB : LCD900)

### • LCD



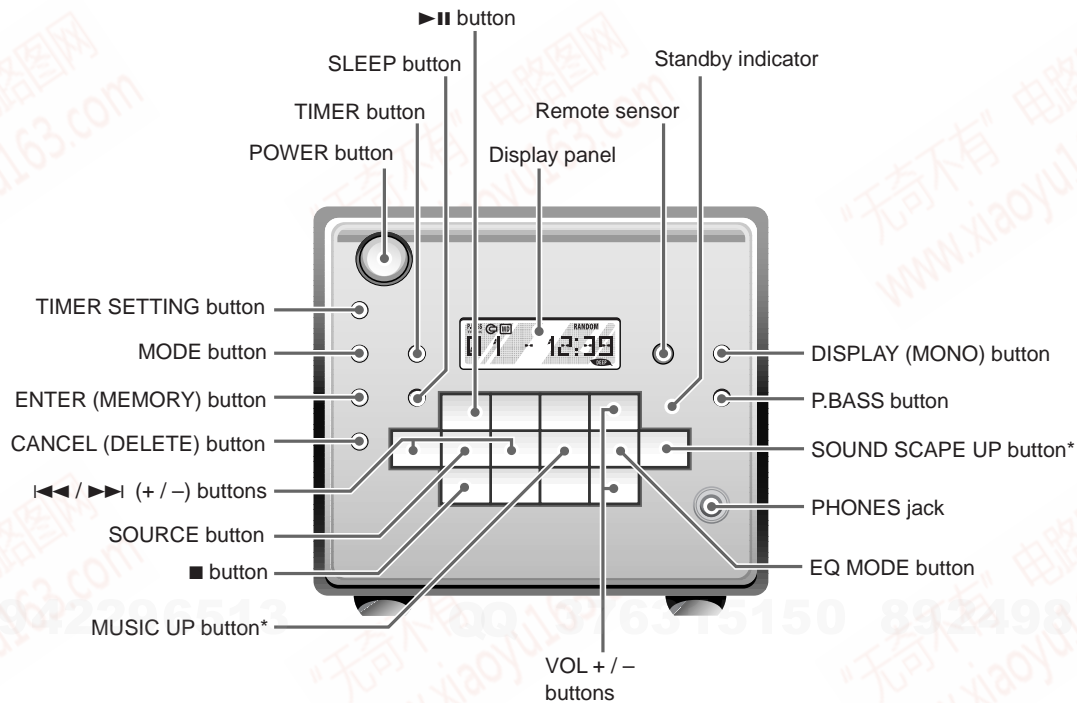
### • Pin Connection



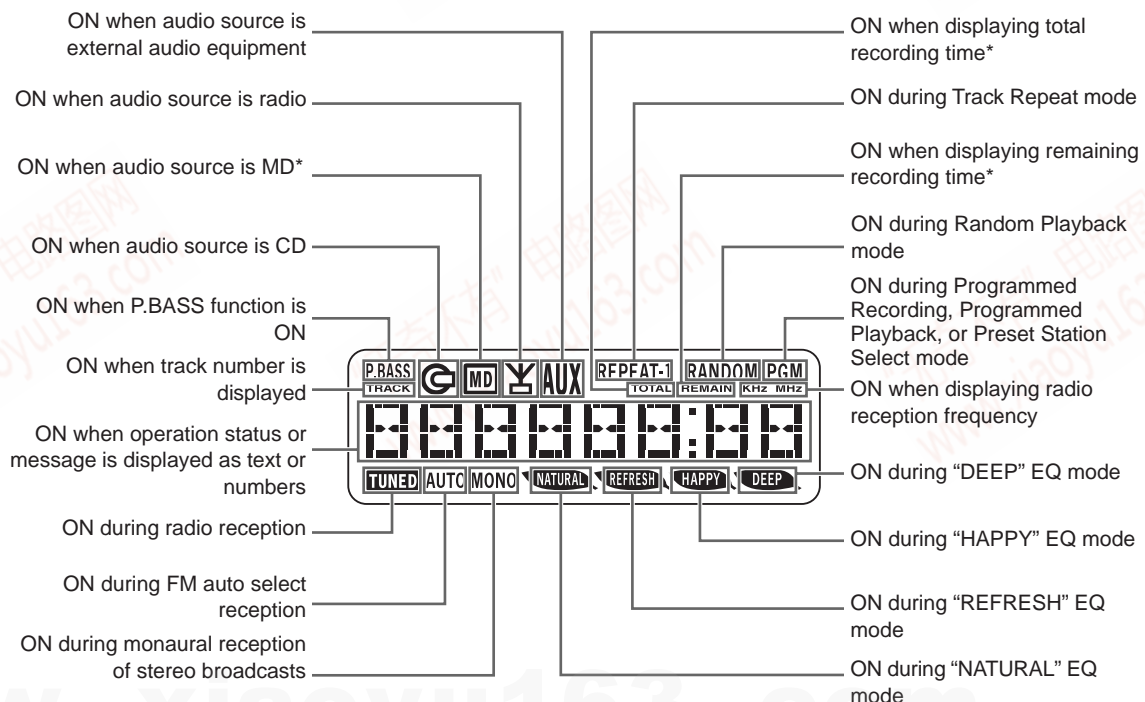
## 8. PANEL FACILITIES AND SPECIFICATIONS

### 8.1 PANEL FACILITIES

#### ■ CD RECEIVER



#### Display panel



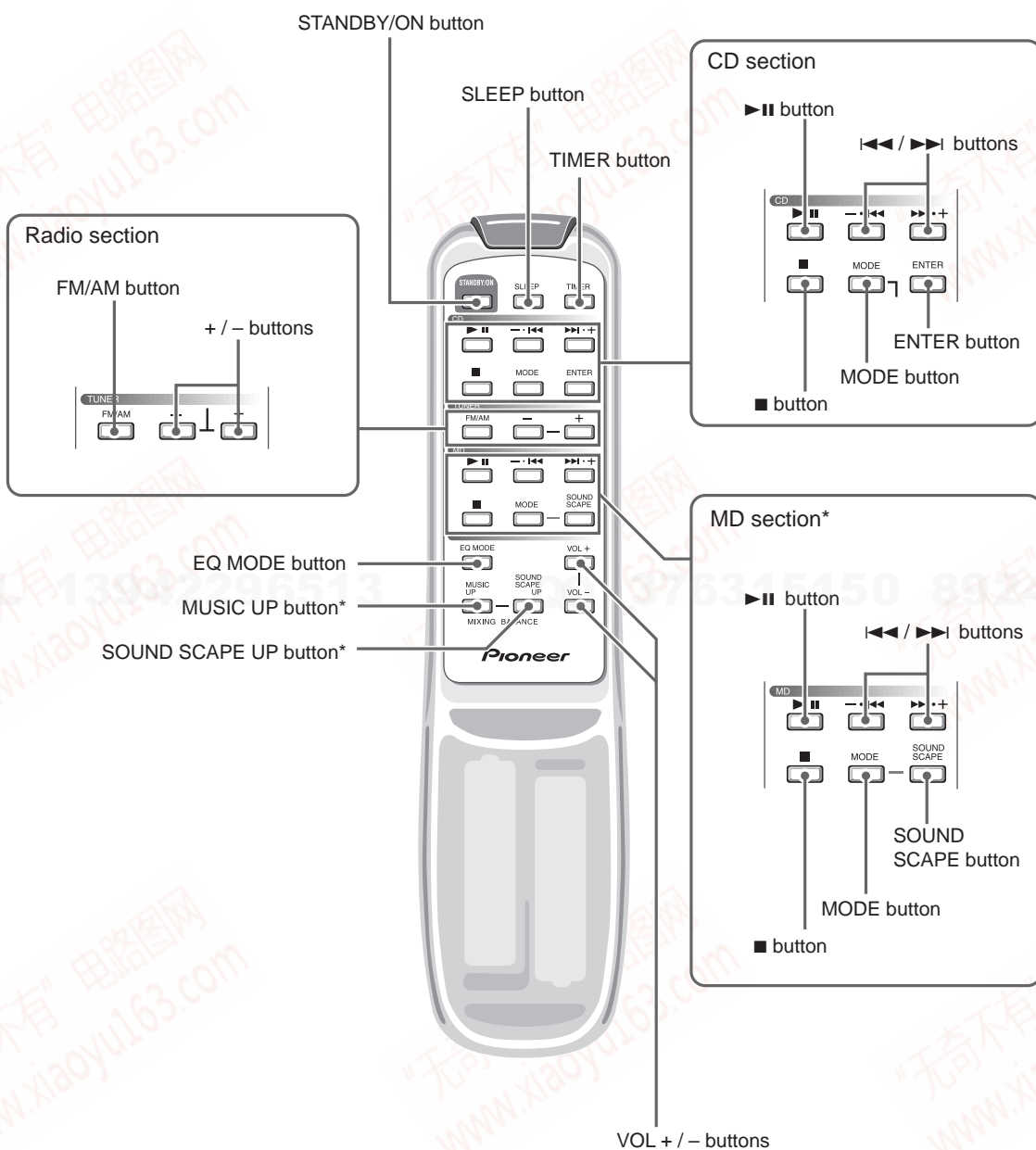
\* These buttons and indicators function only when the MD recorder (sold separately) is connected to this system.

# X-HMD01, X-HMD03, X-HX99, X-HX05

QQ 376315150

892498299

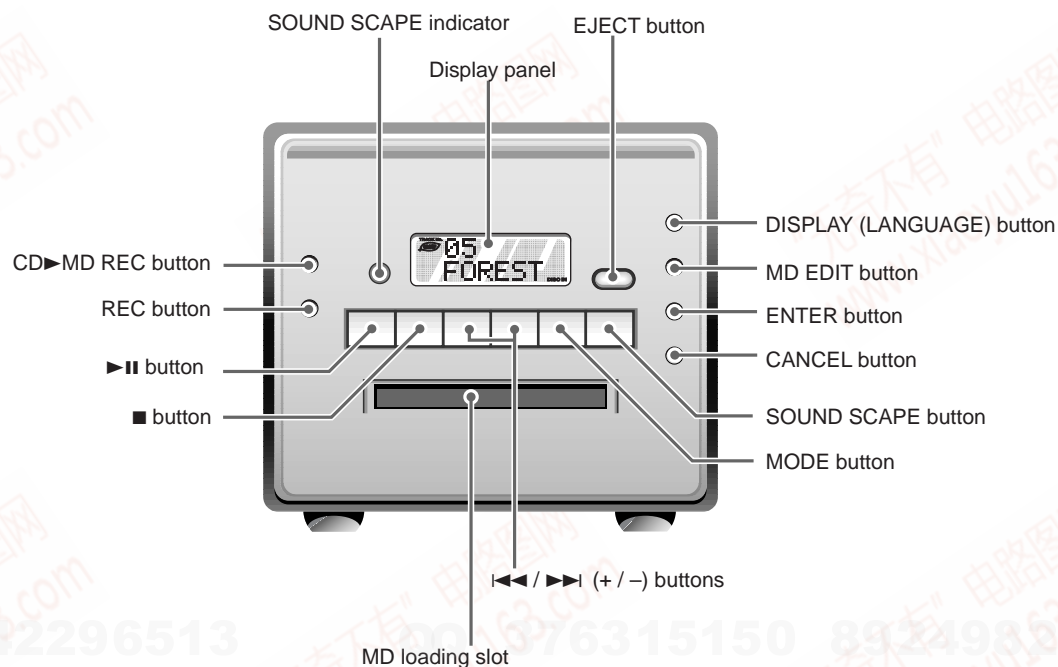
## ■ REMOTE CONTROL UNIT



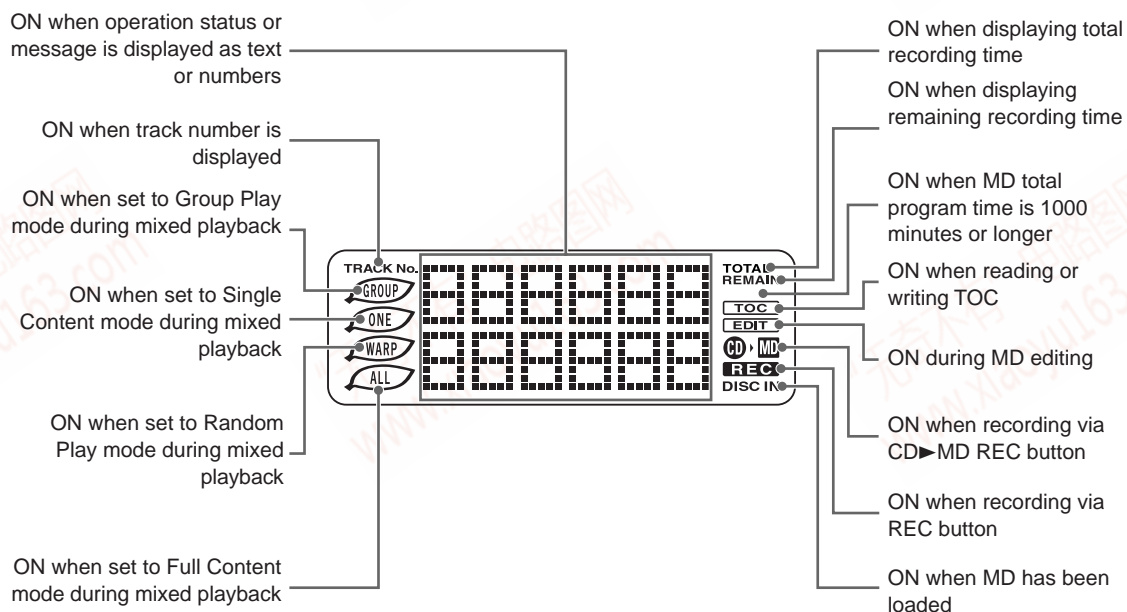
\* All buttons of the MD section, the SOUND SCAPE UP button and the MUSIC UP button function only when the MD recorder (sold separately) is connected to this system. See the Operating Instructions of the MD recorder for the detailed operation of these buttons.

[www.xiaoyu163.com](http://www.xiaoyu163.com)

# MD RECORDER



## Display Panel



# X-HMD01, X-HMD03, X-HX99, X-HX05

## 8.2 SPECIFICATIONS

- Specifications and design subject to possible modification without notice, due to improvements.

### ■ CD RECEIVER

#### CD player unit

Type ..... Compact disc audio system  
Medium ..... Compact disc (CD)  
No. of channels ..... Two (stereo)  
Program steps ..... 32

#### Amplifier unit

Maximum practical output (RMS)  
..... 5 W + 5 W (1 kHz, T.H.D. 10 %, 4  $\Omega$ )

#### FM (UKW)/AM (MW/LW) tuner section

Reception frequency  
FM ..... 87.50 to 108.00 MHz in 50-kHz steps  
FMW ..... 88.0 to 108.0 MHz in 100-kHz steps  
AM ..... 531 to 1,602 kHz in 9-kHz steps  
AMW ..... 530 to 1,600 kHz in 10-kHz steps

#### Antenna

AM ..... Loop antenna (supplied)  
FM ..... 75 W unbalanced type  
(extends from rear of set)

#### Power supply, etc.

Power supply voltage ..... AC 120 V, 60 Hz  
Power consumption (based on electrical product regulations)  
..... 30 W  
Power consumption in standby mode ..... less than 3 W  
External dimensions ..... 145 (W)  $\times$  137 (H)  $\times$  250 (D) mm  
(5  $\frac{3}{4}$  (W)  $\times$  5  $\frac{1}{2}$  (H)  $\times$  9  $\frac{7}{8}$  (D) inches)  
Weight ..... 2.6 kg (5 lb 11.7 oz)

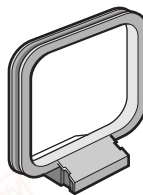
#### Speaker system

Type ..... Book-shelf style, bass reflex type magnetically shielded  
Speakers ..... 10-cm full range cone type  
Nominal impedance ..... 4  $\Omega$   
Playback frequency range ..... 50 Hz to 20 kHz  
Maximum input ..... 25 W  
External dimensions ..... 145 (W)  $\times$  137 (H)  $\times$  200 (D) mm  
(5  $\frac{3}{4}$  (W)  $\times$  5  $\frac{1}{2}$  (H)  $\times$  7  $\frac{7}{8}$  (D) inches)  
Weight ..... 1.3 kg (2 lb 13.8 oz) each

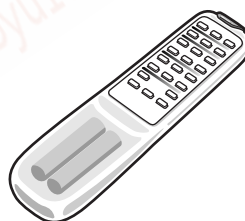
### ■ MD RECORDER

Type ..... Mini disc digital audio system  
Medium ..... Mini disc (MD)  
Frequency characteristics ..... 20 Hz to 20 kHz (+/- 3 dB)  
Error correction method  
..... Advanced Cross Interleave Code (ACIRC) Solomon code  
Coding ..... Adaptive Transform Acoustic Coding (ATRAC)  
Power supply voltage ..... DC 5 V, 230 mA  
..... DC 9 V, 14 mA  
External dimensions ..... 145 (W)  $\times$  137 (H)  $\times$  235 (D) mm  
(5  $\frac{3}{4}$   $\times$  5  $\frac{1}{2}$   $\times$  9  $\frac{3}{8}$  inches)  
Weight ..... 1.4 kg (3.3 lb)

### ■ ACCESSORIES



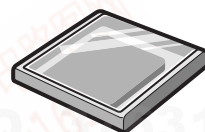
AM loop antenna (60232)  
(The illustration shows the AM loop antenna after assembly)



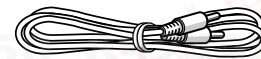
Remote Control  
(60231A)



"AA" (R6) Batteries  
for Remote Control (2)  
(60235)



Sound Scape Disc  
(60234-01, 60234-03)



CD/MD Cable  
(60233)

#### There are two front panel types :



Oval Type

and



Square Type

Both types include the same functions and operate in the same way. The illustrations in this manual are of the oval type.